DECEMBER 1956

ANOTHER TWO METRE CONVERTED

1956 REMEMBRANCE DAY CONTEST RESULTS

Amateur Radio



MAGRATHS

AUSTRALIA'S LEADING RADIO HOUSE FOR

VITAL TELEVISION

COMPONENTS AND PARTS!

We are Australian Agents for these ENGLISH T.V. Manufacturing Companies—Whiteley Electrical Ltd., Sydney S. Bird and H.V. Enthoven. To keep abreast with the latest T.V. developments in Australia, we invite you to register your name with us. We will then mail you progressive reports on our newest components.

At the present moment we can offer you the following:-

• PICTURE TUBES

· OUTDOOR AND INDOOR ANTENNAS

VIDEO AND I.F. COUPLING AND TRAP COILS
 NEUTRALISING AND COMPENSATION COILS

AERIAL AND MIXER COILS
 FILAMENT CHOKES AND TRIMMER CONDENSERS

POWER AND LF. TRANSFORMERS

POWER AND I.F. TRANSFORMER
 I.F. CHASSIS ASSEMBLIES, ETC.

ILLUSTRATED HERE (top to bottom) LINE E.H.T. CHASSIS ASSEMBLY DEFLECTION AND FOCUSING ASSEMBLY TURRET TUNER

All prices on application.

J. H. MAGRATH STY.LTD.

Ist FLOOR, 208 LITTLE LONSDALE STREET,
MELBOURNE, VIC. Phone: FB 3731

Open Saturday mornings, too.



1/-

Registered at G.P.O., Melbourne, for

"HAM" RADIO SUPPLIERS

5A MELVILLE STREET, HAWTHORN, VICTORIA

North Balwyn Tram Passes Corner, near Vogue Theatre.

Note New Phone Number: WM 6465 Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

5/.

15/-

25/-

15/-

25/

NOTE THESE VALVE PRICES American Loran Indicator 6B-APN4. Contains 26 valves, in-

v			THESE	YELLYE	LIUCES
	L	ok at	these Bargain	Priced NEW V	ALVES-
		2/6	6K6 7/6		
٠		2/6		6U7 10/-	
5		10/-	6K7G 7/6	6Y6 7/6	955 7/6
١.		5/-	6K8G 10/-	7A6 5/-	957 10/-
5		10/-	6K8GT 15/-	7C5 10/-	EF50 and
٠.		10/-	6L7 10/-	707 2/6	Socket 6/6
٠.		10/-	6L7G 7/6	7W7 5/-	EL35 10/-
١		5/-	6N7 10/-	12SG7 10/-	
7		3/11	6N8 15/-	12SJ7 10/-	VR75 15/-
37		15/-	6Q7G 5/-	12SK7 10/-	VR90 15/-
١.		15/-	6R7G 10/-	12SQ7 2/6	VR100 5/-
٠.		7/6	6SC7 10/-	12SQ7GT 2/6	VR101 5/-
		10/-		25AC5 10/-	VR102 5/-
		10/-		807 20/-	VR103 5/-
3G		10/-	6SJ7GT 12/6	815 50/-	VT50 2/6
G		10/-	6SK7GT 12/6	830B 45/-	

English VT127 (4v. power pent., 20 watt, octal base), 4/11 Full stocks of New Valves available. Prices on request.

	Follow	ing list	are ex	Disposals.	guara	nteed-	10/-
1K5	5/-	6C5	10/-		10/-	12A6	10/-
1K7	5/-	6D6	5/-	6SK7G	10/-	12K8	10/-
1L4 1S5	5/-	6G8	10/-	6SL7	7/6	1625 CV92	5/-
1T4	10/-	6H6	5/-	6U7	10/-	EF50	3/6

C.R.O. Tubes: 5CP1 50/-, 5BP1 30/-, NC13A 30/-. VCR511B 40/-, VCR138 20/-,

WE EXTEND TO ALL OUR CLIENTS A MERRY CHRISTMAS AND HAPPY NEW YEAR

American BC966A I.F.F. Units, brand new. These units contain three 7193s, seven 6SH7s, three 6H6s, 10-point Jones plug and socket, four P.M.G. type relays, ceramicon trimmer, 7-plate split-stator midget condenser, as well as a large assortment of resistors and condensers, v.h.f. chokes, and sockets. Complete with genemotor, control box and cables in wooden packing case; no packing charge £5/17/6 As above but less the genemotor £4/10/-

Filament Transformers, 10v. 3 amp., 12.6v. 2 amp., 6.3v. at 300 Ma., brand new Filament Trans.: 230v. input; 3 taps 4v., 2 taps 44v., 1 tap 5v.,

1 tap 6.3v., 1 tap 12v., 1 tap 18v., at 10 amps., new, 50/-Filament Trans.: 230v. input; 2 taps 8.5v. at 8 amps. 35/-4v. Filament Transformers Filament Transformer, 10v. 3 amp., 5v. 2 amp., brand new, 30/-

Transformers, high amp., low voltage. Input volts 230, output volts 13-13.5-14-15, at sixty amps. £5 Step-down Transformers, 230v. to 80v.-90v.-100v. at 2.5 amp. Brand new

Brand new £2/10/, Genemotor Power Supply, Type 16 SCR522, 24v. input, 150v. and 300v. output at 300 Ma. Includes relay, voltage regula-tor, etc. A gift at £1. Too heavy for postage. Packing 5/-APX1 Chassis Top Deck. Contains 28 ceramic 7-pin miniature valve sockets. Host of condensers, resistors. A very good

buy at 45/-. Postage 5/-AN/APN1 Altimeter. American, less valves and genemotor Contains unit suitable for making Wobulator and other useful

cluding 14 6SN7, 2 6SL7Gs, 7 6H6s, 1 6SJ7 and 5CP1 C.R.O. tube. Less 100 Kc. crystal, no packing charge £15
American Loran Receiver R9A-APN4, 16 valves. Part of Loran Indicator. Equipment contains 3 6B4s, 1 5U4, 1 VR105, 2 2X2s,

1 68J7, 4 68K78, 1 6H6, 1 68N7, 1 68L7, 1 68A7, lots useful parts. New in case. No packing charge. Gift at £7/10/-AT5 Transmitters, less valves and dust covers SCR522 American Transceiver, Frequency: 100 to 150 Mc.

clean condition, less valves £ 10 Command Receiver Right-angle Drives 2/6

Command Receiver Flexible Drives, 12 ft. long 11/Command Modulator Chassis, less Valves 50/AN/ARNSA Radio Receivers, American V.h.f., xtal locked. Spot

frequencies 332.6 Mc. to 335 Mc. Complete with 10 valves and xtals. Six only 6AJ5, two 12SN7, one 12SR7, one 28D7 Contains six relays, ceramic slug transformers, etc. £5/17/6 AR8 Vernier Dials, low and high freq. Brand new £2 Calibration Perspect Dial enly

RA10FA and MN26C Remote Tuning Control Boxes (new). A few only at A few only at Co-ax Cable, 50 ohm, any length 1/9 yard Co-ax Cable, 100 ohm, any length 2/- vard

Co-ax, indoor type, cotton covered . .. 1/- yard 5/- pair Co-ax Plugs and Sockets, American Ampenol ... 2/6 each Co-ax Right-Angle Plugs, American Ampenol English Carbon Mike Transformers, new English Filter Chokes, small type, 40 Ma., 100 ohm resist, 3/6

Meters-0-0.35 and 0-1 Amp. R.F., FS6 and 101 type ... 25/- ea. | Meters=0-1 Ma. 2½" round type, scale 0-10v. 0-20 Ma. 40/-| Meters=0-10 Ma. 2" round, Triplette, new 17/6 | Meters=0-30 Ma. 2½" round type, American 40/-| Meters=0-100 Ma. 2" square, scaled 0-300, new £1

Meters—0-100 Ma. 2 square, scaled 0-300, new Meters—0-150 Ma. 2" square new Meters—0-2.5 Amp. R.F., 2" square type, new Meters-0-40 amp. A.C. 21" round type

Meters—0-20v., 5 Ma. movement, 2" square type, new Meters—0-20v., A.C. 2½" round type, new ARGE STOCK OF CRYSTALS

3.5 Mc. Marker Crystals, latest miniature type complete with £2/10/socket Amateur Band Crystals, any frequency ...

Gold Plated Marker and Commercial Crystals, price on request. Delivery in seven days.

Following is a list of Crystal Frequencies available for immediate delivery. £2 each-

£2	2081.2 Kc.	5655.555 Kc.	7021.5 Kc.	7075 Kc.	7725 Kc.
r., 1 tap 5v.,	2103.1 Kc.	5677,777 Kc.	7021.715 Kc.	7077 Kc.	8009 Kc.
iew, 50/-	2112.5 Kc.	5700 Kc.	7024 Kc.	7080 Kc	8011 Kc.
nps 35/-	2208.1 Kc.	5722,222 Kc.	7025 Kc.	7100 Kc.	8016 Kc.
15/- each	3382.5 Kc.	5744.444 Kc.	7028 Kc.	7106.7 Kc.	8018 Kc.
nd new, 30/-	3500 Kc.	5750 Kc.	7032 Kc.	7110 Kc.	8020 Kc.
ts 230, out-	3535 Kc.	5892.5 Kc.	7032.6 Kc.	7120 Kc.	8022 Kc.
£5	4096.6 Kc.	6450 Kc.	7035 Kc.	7121 Kc.	8023 Kc.
at 2.5 amp.	4285 Kc.	6850 Kc.	7040 Kc.	7125 Kc.	8176,923 Kc.
£2/10/-	4495 Kc.	7004 Kc.	7042.65 Kc.	7126 Kc.	8183,5 Kc.
input, 150v.	4535 Kc.	7005 Kc.	7045 Kc.	7130 Kc.	8317.2 Kc.
tage regula-	4540 Kc.	7010 Kc.	7047 Kc.	7134 Kc.	8320 Kc.
Packing 5/	5000 Kc.	7010.7 Kc.	7050 Kc.	7140 Kc.	10.511 Mc.
n miniature	5050 Kc.	7011.5 Kc.	7053.5 Kc.	7145 Kc.	10.524 Mc
very good	5300 Kc.	7011.75 Kc.	7063 Kc.	7150 Kc.	10,530 Mc.
	5360 Kc.	7012 Kc.	7064 Kc.	7156 Kc.	10,5465 Mc.
genemotor.	5456 Kc.	7016 Kc.	7068 Kc.	7162.5 Kc.	10.556 Mc.
other useful	5530 Kc.	7018 Kc.	7072 Kc.	7174 Kc.	12.803 Mc.
£3 each	5633,333 Kc.	7021 Kc.	7073.5 Kc.	7175 Kc.	12.915 Mc.

components

1A5

1B5

1H5 1K4

3Q5

6RS

6E5

6F6

6.18G

SCS

DECEMBER - - 1956

Vol 24

No 12

EDITOR:

J. G. MARSLAND, VK3NY,

ASSOCIATE EDITOR: R. W. HIGGINBOTHAM, VK3RN.

TECHNICAL EDITOR: K. E. PINCOTT, VK3AFJ.

TECHNICAL STAFF:

J. C. DUNCAN, VK3VZ.

D. A. NORMAN, VK3UC.

R. S. FISHER, VK3OM. A. E. MORRISON, VK4MA

ADVERTISING REPRESENTATIVE:

BEATRICE TOUZEAU, 96 Collins St., Melbourne, C.1. Telephone: MF 4505

PRINTERS:

"RICHMOND CHRONICLE," Shakespeare St., Richmond, E.1. Telephone: JB 2419.

MSS, and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," C.O.R. House, 191 Queen Street, Melbourne, C.1, on or before the 8th of each month.

Subscription rate in Australia is 12/- per annum, in advance (post paid) and A15/- in all other countries.

Wireless Institute of Australia (Victorian Division) Rooms' Phone Number is MY 1087.

WI BROADCASTS

All Amateurs are urged to keep these equencies clear during, and for a period 15 minutes after, the official Broadcasts.

VK2WI: Sundays, 1100 hours EST, 7145 Kc. and 2000 hours EST 56 and 144 Mc. No frequency checks available from VK2WI. Intrastate working frequency, 7125 Kc.

VKSWI: Sundays, 1130 hours EST, simultan-cously on 3573 and 7146 Kc., 87.5 and 146.25 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VKSWI

VK4WI: Sundays, 0900 hours EST, simultan-cously on 3860 and 14842 Kc. 3860 Kc. channel is used from 0915 hours to 1015 hours each Sunday for the Wil-A. Country hook-up. No frequency checks available.

VK5WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK5MD and VK5WI by arrangements on all bands to 56 Mc.

VK6WI: Sundays, 6930 hours WAST, on 7146 Kc. No frequency checks available. VK?WI: Sundays, at 1000 hours EST, on 7146 Kc. and 3672 Kc. No frequency checks are available.

VK9WI: Sundays, 1000 hours EST, simultan-eously on 3.5, 7, 14 and 144 Mc. Individual frequency checks of Amateur Stations given when VK9WI is on the sir.

AMATEUR RADIO

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

Published by the Wireless Institute of Australia. C.O.R. House, 191 Queen Street. Melbourne, C.1.

EDITORIAL

AIMS OF THE INSTITUTE

To act as the voice of the Amateur in public discussions. To assist in the investigation of communication problems.

To conduct educational work.

To provide a medium for exchange of ideas and to publish a journal. To promote friendships between ex-

perimenters. At this time of the year most people endeavour to convey to others, expressions of Christmas goodwill, and to show in a practical manner by the exchange of gifts, that friendship means something real and valuable to them

The spirit of friendship has much to commend it at all times and the Radio Amateur knows that his attitude to his fellow Amateur is important in this respect, as friendship has always been part of the Amateur's code

At this season of the year, it seems to us that we should ensure that our help and co-operation is extended more heartily and consistently than usual to others interested in Amateur Radio, and that we make special efforts to break down the natural shyness and reserve which often prevents us getting together.

Your Federal Executive suggests that you endeavour to carry the Christmas spirit to some young enthusiast in Radio, with the intention of assisting him to qualify as the holder of an experimental licence.

No doubt many of our members already do assist others in this way. but there are plenty of young people who would be cheered and helped by a little practical assistance and advice.

Christmas offers a suitable opportunity for us to visit other Amat-eurs, especially establishing friendly relations with our near neighbours as well as forming lasting friendships with other Divisional members.

For those who are shy types and find it difficult to form new friend-ships, this time of the year makes new contacts easy. Everyone is more easily approached at Christmas and the general spirit of friendliness makes these contacts simple and effective.

We have been reading through some old copies of "QST" (1928 vintage) and find that the prevailing spirit of those days was "real and practical friendship." Perhaps that is why some of our overseas Amateur Radio associations have grown and developed to the strength they enjoy today.

Your Federal Executive desires to extend sincere thanks to all those who have assisted in the administration and development of the Wireless In-stitute of Australia and to express the wish on behalf of the Federal Council that Christmas will be a season of goodwill indeed and that the New Year will be a happy one for you and yours.

PEDERAL EXECUTIVE

THE CONTENTS

Another Two-Metre Converter Nullabor Plains Expedition, 1956-1956 Remembrance Day Contest Results

YL Corner

S.w.l. Section Fifty-Six Meyagcycles and Above 12 DX Activity by VK3AHH 13 Prediction Chart for Dec., 1956 .. 13 Federal, QSL, and Divisional Index to Volume 24-1956 20

ANOTHER TWO-METRE CONVERTER

BY R. M. WINCH,* VK2OA

YES! Another 2 metre converter using the same old tubes and the same old seacodd converted to the same old case of the same of the same

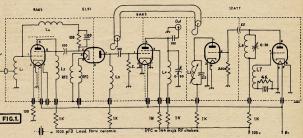
If you have read the results of sundry too hunts, hidden transmitter hunts, etc. for hunts, et

with each other. The technical bods refer to this sort of thing as if coupling of some form of other. The coupling of some form of other than the coupling of the coupling of the coupling of the coupling the coupli

See that lead sneaking under the first coil, around the end of the shield and under the second coil on its way to the second valve socket? The shield sin't in the race against that one. See that three-quarter inch long cathode resistor? Whoal Before you eighty metre types get too sarcastic, try putting a 10-wat wire-wound resistor in the cathode of your final and then by-pass it with a

PRACTICAL APPROACH

Too long have we followed the old idea of putting all the valves, transformers and other bulky items on top of the chassis and all the wiring, resistors, capacitors and other small items under the constant of the chassis of the chassis and coordinate of the chassis and the other lot on the other side of the chassis, and the other lot on the other side of the chassis, we have automatically shielded them from



ally dropped below 20 db. so that when he finally built a new converter which came up, first go, with a noise figure of 5 db., there must be something worth talking about, don't you think?

TECHNICAL REASONING

In every piece of r.f. apparatus there is both "hoft" and "cold" leads and components. Circuitwise, that is OK, every nasty little problems rear their ugly heads. Obviously, we want to get the "hef" bits as hot as we can; you is what the handbook means when it is what the handbook means when it alks about ceramic valve sockets, air supported colls wound of heavy with colore to surrounding metal, etc. of color to surrounding metal, etc.

Also, we do not want different families of "hot" leads getting mixed up *38 Boundary Street, Parramatta, N.S.W. 0.1 uF. paper capacitor to a spot on the chassis two feet six inches away from the cathode. (3" at 2 metres equals 2' 6" at 80 metres.) Rocks you, doesn't it?

By now, you should be at the stage where you will readily believe that we want our "cold" leads and components so cold that they have icicles on them and they should be like that all over. (Who said take it up to the top of Mt. Kosciusko'). From the foregoing it will be seen that we should treat each cold be seen that we should treat each cold manner.

[an Completely shield it from all hot.]

(a) Completely shield it from all not leads and components so that no r.f. can be induced into it, either inductively or capacitively, and
(b) Where the cold lead joins a hot component, completely by-pass the junction to ground.

These sound to be very stringent requirements which we have to fill.

other other. That has fixed up requirement (a).

Now we come to requirement (b).

Suppose we consider the lead from the

Suppose we consider the lead from the cold end of the plate coil which we cold end of the plate coil which we the chassis to h.t. Our normal way of the chassis to h.t. Our normal way was the point to ground. Note the way of "impedance" instead of "capellade and the chassis and on the way it can have r.t. induced into it. Our have the way it can have r.t. induced into it. Our have the way it can have r.t. induced into it. Our have the chassis and on the way it can have r.t. induced into it. Our have the way it can have r.t. induced into it. Our have warm a by-pass capacitor to the hole in the hole

That certainly is a tough assignment, but we can get full marks for the sec-

the chassis.

ond part and score pretty highly for the first part if we use exemule lead-through capacitors to do our by-nasing. These the part is a second of the capacitors of the own and the capacitors of the capacitors of the capacitors of the capacitors of the partial raised and outside. Through the entire is a lead connected to the inside plated inside and outside. Through the centre is a lead connected to the size of the capacitors of the capacitors of the capacitors on the capacitors of the capacitors on the capacitors on each side of the chassis. Since the continuation of the capacitors which is the capacitors of the capac

They can be placed around the valve socket so that the screen, cathode and filament connections of the socket can be connected to them with the minimum course, being connected to the other course, being connected to the other end of the centre conductor which is on the cold side of the chassis. (The cold end of the plate cold is supported by one variable from VKSEF's friend, they had 1000 poofs and they can stand more joils than you can. And they VKSEF and the Asprox VKSEF and with the Asprox VKSEF and the As

PRACTICAL APPLICATION

Now that you have the meat of the story here are some pretty pictures. Fig. a how the circuit with the characteristic property of the control of the control

The circuit is straightforward and has appeared in many publications over the last five years or so. The EC91 was chosen for the grounded grid stage because it gave a better layout than the conventional 616 or 12ATT. There may be some argument about the use of the pentode mixer, but some research (into

"QST" and the like) seemed to sum up that if the cascode is doing its job properly the difference in noise between a triode and a pentode mixer does not mean much and the pentode is not so critical of oscillator injection voltage. The overtone oscillator circuit used as

The overtone oscillator circuit used as obcome for its used an disputment. The shown as being slug tuned (chrass slug), and the shown as being slug tuned (chrass slug). This could be shown as being slug tuned (chrass slug), and the shown as being slug tuned (chrass slug), and the shown as the same shown as the shown

A hole was pored in the chassis, the co-ex pushed turough from the top, the braid soldered to the chassis, then the piece of inner conductor bent round to form a single turn and the end soldered to the end of the braid. The single turn is closely coupled to the cold end of the cold.

GETTING IT GOING

This is where you re-read the articles written by those two blocks whose names were mentioned earlier, say to great the property of the proper

Just to save all argument, let's assume that the crystal frequency is 8500 Kc. Three times that is 25.5 Mc. (that is where 1.6/7 has to go) and—let's see—five times that is 127.5 Mc. (1.5) which gives 1.6.5 to 2.0.5 Mc. out, so straight-away you can play around with 1.4 until it hits approximately 17-17.5 Mc. This done, forget it and turn to 1.6. Wind eleven coils of different sizes and pick

the one that resonates at 25.5 Mc. with approximately 35 pF. across it (wired into the circuit and with the valves plugged in, of course). Incidentally, a good former for this coil is a piece of the polythene out of co-ax cable.

the pow priese du to c'ocea caure.

The chastis and wrap a small piece of spaer around the cold end of the former. On the paper wind IT with approximately one-third the number of turns in L8. Fasten the turns of L7 down-not with chewing gum—and make sure that the coupling can be varied. Now put it back and wire it in. Better check that L6 still hits 255 McI.

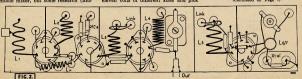
Apply the h.t. on it and see what happens. By tuning the plate circuit it should be possible to make the stage oscillate. If no oscillation occurs at any setting of the plate tuning check the following: I.7 either wound or connected back-to-front, insufficient coupling between L6 and L7, L7 too small.

With oscillation occurring over a wide range of plate tuning, decrease wide the coupling a little bit at a time until the stage oscillates over only one small portion of the plate tuning. Now listen on 25.5 Me. for that nice clean crystal note and make sure that there is nothing else.

Got that all fixed up? Good! You're halfway. Laddie, you've made an overtone oscillator work and you may now go out and crow over those uninformed 80 metre types that inhabit your town. The town of the thing of the thing the t

Li, L2 and L3. Squeeze, push, pull, stretch or whatever is necessary to make them resonate at 144.5 Mc. and then use the same procedure to make L5 crystal worth to be \$800, so for 255 and 1273 Mc. read the appropriate multiplications of your crystal.) While you have been doing this, you will have noticed that L2 has a very broad all are. Sent over, that is how they all are.

Now comes the big moment! Make sure that the 2 metre beam is connected to the converter and that the converter is connected to the receiver, which is connected to the receiver, which is and that the speaker is connected. (You would be amazed just how essential it is to do all those things.) Hit the big wrich and as soon as it has warmed up, which is the second as it has warmed up, which was the second as the second as it is a second as a second as it is a second as it is a second as it is a second as a second as it is a second as a se



ZEPHYR MICROPHONES



"THE MICROPHONE THAT SPEAKS FOR ITSELF"

TYPE "80"

A high quality Moving Coil Microphone of striking appearance and fidelity.

- Ideal for transmission of voice or music.
- Good appearance.
- Solid cast case, finished in stoved black enamel, full tilting head.

TYPE "8XA"

A quality Crystal Insert with "Zephyrfil" filter.

- Durable chrome steel cage.
- Hand or stand pattern.
- Good high frequency response.
- Full tilting head.



TYPE "40"

A high grade Studio Microphone, reasonably priced, for those requiring high fidelity.

- Imported magnets, highly efficient generator.
 Fully protected against
- Fully protected against dust and filings.
- Rotatable cage—360°.
- Chrome copper cage, black bakelite base, and steel ginbles.

TYPE "90"

Precision built Moving Coil Generator provides good quality reproduction.

- Light weight, durable chrome and baked enamel metal case.
- Full tilting head.
 Excellent sensitivity.
 - Balant sensitivity
- Robust construction.

AUSTRALIAN MADE - - FOR AUSTRALIAN CONDITIONS

Manufactured by-

ZEPHYR PRODUCTS PTY. LTD.

Phone: BL 1300

58 HIGH STREET, GLEN IRIS, VIC.

Phone: BL 1300

AVAILABLE FROM ALL LEADING TRADE HOUSES

Nullabor Plains Expedition, '56-7

BY G. M. BOWEN.* VK5XU

THE Expedition is being run in con-junction with the first National Conference of Australian Speleologists (cave explorers to the uninitiated) tific expeditions in this field undertaken in Australia. It aims to acquire data on this remote area in the west of South Australia which hitherto it has not been possible to obtain because of its inaccessibility and the inhospitable nature of the terrain.

Most Australian States now have a Most Australian States now have a group of enthusiasts who are devoted to the exploration of caves and the Conference, which precedes the Expedition, is being held in order to inaugurate a National Federation of Australian Speleologists. This is to be Australian Speleologists. This is to be held at Pamanga, near Christies Beach, some 20 miles south of Adelaide, from 26th to 28th December, 1956.

At 0400 hours, on the 29th, approxi-At 0400 hours, on the 29th, approximately 60 members, from three States, will set out for the Nullabor Plains under the leadership of the S.A. Cave moder the leadership of the S.A. Cave Smith, President). They will travel in trucks, each vehicle being fully equipped with material for exploring the caves and carrying its own food, water and fuel. Ceduna will be the dispersal promoted and water and fuel of the second control of the control of the second contro location where final details will be ar-ranged and water taken aboard for the 10 days in the field. The trucks will disperse over the Nullabor Plains form-ing the apexes of a triangle some 100 miles apart, operating in areas far removed from civilization.

Contact extreme such narry and the Hastiquarters well-de will be by Tadio communication as each truck will be equipped with mobile transecivers. These will operate on the 5 Mc. and 3 Mc. frequencies allocated to the Bush Mc. frequencies allocated to the Bush hast. George Cameron (VKSEC) is in harge of the radio network in that area. Each vehicle will also be able to contact Ceduna direct in any case of

As organiser of that side of the ex-pedition, I shall naturally be carrying equipment capable of operating on the Amateur bands and whenever possible— as power permits, usually in these cases—will be on the air looking for contacts.

The question is bound to be asked by someone—"What is the value of such an excursion." Well, although the cost is approximately £25 per person (and paid by them too!), very little is known of this unique area except that it is a large limestone plateau rising some 500 large limestone plateau rising some 500 feet above sea-level, and in places above the surrounding country another 200 feet. It is not perfectly horizontal, having a marked slope from west to east. Propagation of medium frequency raido waves by ground wave is negligible because of the very poor conductivity of the earth (compare the S.E. of South Australia) and some trouble is anticipated on the 2020 Kc. frequency unless dipoles or counterpoises are used.

Many caves occur in the area. Some of them have amazingly large single chambers with ceilings reaching 250 feet. Others penetrate to the water table nearly 300 feet below the surface and provide large areas of deep lakes which eral content of much of this water is too high for human use-except externally; and summer being what it is, and the and summer being what it is, and the temperatures on the Nullabor Plains running usually over the century, I guess that any water will be acceptable even though I have been told that its normal temperature is just above 65 darvae—"shipter_mestimbers." degrees-"shiver-me-timbers

Scientists in every branch will be making their studies of the rock forma-tions and origins of the caves will be "meat" for the geologists; physicists will plot air temperatures and movement within the caves; zoologists, animal life on and below the plains; botanists, plant life; anthropologists will be looking for signs of native occupation and relics of earlier periods; surveyors will accurately map the caves and their exact positions will be determined; photographers will gather valuable records of everything that is worth photographing. And what will yours truly be doing?

Well, that's a secret even to him yet, but he'll let you know if and/or when he returns! So keep listening, chaps. The W.I.A. is in this up to its neck, by heck!

AMATEUR CALL SIGNS FOR MONTH OF SEPTEMBER, 1956

NEW CALL SIGNS /K— New South Wales AE—L. E. Harris, 26 Park Ave., Waitara. QH—H. D. Howe, 25 Maroubra Bay Rd., Page-

Victoria

3ZDI-B. J. Crisp, 69 Northcliffe Av., Edithvale.

3ZDK-K. J. McLachlan, Shingler St., Leon-3ZDK-R. J. McLacinal, Salagar St., Ballarat. 3ZDM-R. J. Beames, 502 Ligar St., Ballarat. 3ZDR-R. H. Chapman, 15 Corona St., North Balwyn.

3ZEB-S. J. Beaton, 101 McKinnon Rd., Mc-

Queensland 4BI-J. Bermingham, 103 Kerry Rd., Coopers Plains.

Plains, tee Rerry Rd., Coopers

ADP—D. M. Fortley (Dr.), 35 Oxlade Drive, New
Farm, Brisbane.

4HF—C. H. Foley, 2 John St., West End, Towns
ville. ville.

WR-E-W W Beale, 2 Duncan St., Hill End,

WR-E-R F. Woolley, 12 Kennedy St., Aeroglen,

4ZW-_Osime, 194 Cairn St., Cairn,

4ZW-B-D P. Ward, 11 Melville Ter. Wynnum,

4ZAH-B-P. Ward, 11 Melville Ter. Wynnum,

5XX-G-P. The South Australy Mille End,

5WH-W H. John, 14 Shifter Ave., Woodville

West.

6ZAO-R. G. Smith, Waterloo. 7BT—T. G. Barnes, "Cotteswold," Main Rd., Taroona.

OAA.W. J. Steuart, Antarctica. 9AJ.E. L. Lerpiniere, Direction Island, Cocos.

CHANGES OF ADDRESS VK— New South Wales 2MU-L. J. Case, 29 Faraday St., Padstow, 2OZ-W. E. Dixon, Mann St., Glenbrook. 2QI-C. Bowler, M.V. "Century," C/o. 25 Castle St., Randwick.

2XN-W. E. Gibbings, 52 Churchill Ave., Strathfield.

2AGN—G. Nixon-Smith, "Banyandah," R.M.B.
288, via Bathurst.

2ZAR—R. A. Ridgley, 77 Garfield St., Five
Dock.

2ZAT—J. Wakefield, 5 Oakes Ave., Eastwood.

Victoria

3LC—A. W. Chandler. 1013 High St., Armadale.
3NJ—K. H. Meallin. 33 Peterleigh Gr., Essendon.
3QL—S. H. Le Breton, 19 Butcher St., St. Arm. 3QL—S. H. Le Breton, 19 Butcher St., St. Arn-Manuel, Buxton.

3AMU—A. M. Upton, Cambridge St., South APC—Moorabbin & Dietrict Redio Club, C/o.

APC—Moorabbin & Dietrict Redio Club, C/o.

ASC.—Keenes, 73 Daly St., Bentleigh,

3ZCP—A. D. Pridgeon, Nepsan Highway, Drom-

Queensland
4KG—K. J. Briggs, C/o. H. West, 10 Watson St.,
Wilston Heights, Brisbane,
4RB—R. J. Browne. 2 Garden Gr., Dorrington.
4TD—T. A. Dale, 34 Prince St., Annerley, Bris-

5BM-A. R. Matthews, 16 Gurr St., Goodwood. 5BM-A. R. Matthews, 16 Gurr St., Goodwood. Fark. 5DR-A. W. Winter, Murray St., Kinescote. 50N-C. J. Othens, 82 Main Road, Blackwood Fork. SUF-R. Fenwick, C/o. 5AU, Box 207, Port Augusta. 5UW-K. E. Wilson, 5 Reading Rd., Clearview. Western Australia
6AH—A. S. Hill, New Springs Station, via
Wiluna.
6QQ—F. R. Gray, 128 Flinders St., Mt. Haw-

CANCELLED CALL SIGNS VK-New South Wales

VK— New 2ACB—A. C. Bell. 2AOW—J. S. Walker. 2ZBE—R. C. Prout. 2ZBL—W. S. Lane. Victoria 3VD-C. M. Barnett. 3VW-G. Stoble. 3ARI-R. M. Tutton. 3AUM-A. M. Upton 4JC-J. M. Cohoe. South Australia

4JC-J. N. South Australian SME-S. G. McLean. SOP-K. N. Theel. SZAT-G. P. Tuck. Now VK5TX. SZAY-G. P. Yelland. SZBJ-W. H. John. Now VK5WH. Territories IEM-E. L. Macklin.

IHH-J. H. Hicks.

IJW-J. L. Ward.

IRW-R. C. Widows.

IVH-F. A. Van Hulssen.

PERMITS GRANTED FOR TELEVISION EXPERIMENTS

VK- New South Wales 3ASB/T-S. B. Roberts.

REQUIRED

FREQUENCY METERS BC221

Offers to:-

E.M.I. ENGINEERING DEVELOPMENT LTD

P.O. BOX 90, SALISBURY, SOUTH AUSTRALIA

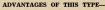


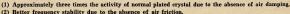
SPECIAL

BRIGHT STAR RADIO are pleased to announce an addition to their line of Crystals. We are now manufacturing-

VACUUM MOUNTED CRYSTALS for general communication frequencies in the range 3 to 14 Mc.

Higher frequencies can be supplied.





(3) Plating cannot deteriorate with time and cause frequency shift.

(4) Two or more crystals can be mounted in the one envelope and thus save space,

Price depends on the tolerance and frequency required, and will be quoted upon request.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firm: Mesers. A. E. Harrold, 128 Charlette SK, Bribbans; Gerard & Goodman Ltd., 192-198 Bundle SL, Adelsider, A. G. Houling Ltd., 131 Fire SL, Addalist, Altins (W.A.) Ltd., 894 Hay St, Perth; Lawrence & Hanson Electrical Pty. Ltd., 56 Collins St, Hobart; Collins Radio, 495 Lonsdale SL, Molbourne; Prices Radio, 5-6 Angel Place, Sydney.

BRIGHT STAR RAD

46 EASTGATE ST., OAKLEIGH, S.E.12

NO OTHER ANTENNA IN THE WORLD COMPARES! NEW! PANDA GILOBE

3-BAND MINIBEAM!

- * Three Bands IO, I5 and 20 Metres
- * One Beam
- * One Feed Line

Check these advantages: No tricky loading colls, twin boom for strength, fits any 2 in. pole, rugged alloy castings, pre-tuned and packed ready for immediate assembly. Specifications: Maximum element length 24 ft., boom width 12 ft., weighs less than 30 lb., all tubing to B.S. HT 10 WP (Alco 53S. T6.). Price: £42 10s. Od., plus 124 per cent Sales Tax. Price is subject to change without notice.

Ring, write or call the Sale Australian Agents

ELECTRONIC INDUSTRIES IMPORTS

139-143 Bouverie Street, CARLTON, Victoria - FI 4161

BRISBANE SYDNEY ADELAIDE PERTH 713 Parrametta Rd. Leichhardt, N.S.V Phone: LM 3311



CLAMP TUBE MODULATION

BY L. F. BRICE* VK50K

Do you want to go on "fone"? Then here is a modulator that will get you there quickly and cheaply without any fiddling. This should appeal to the new Amateur who, perhaps, has not yet the other necessary bits and pieces needed for plate and screen modulation. It might even appeal to some of the cw. boys who would like a good old "fone" ragchew (although they probably would never admit it).

With a few condensers and resistors, a couple of tubes, a little time and you are on the air.

This modulator offers the following: (1) cheapness, (2) simplicity, (3) will modulate any power, (4) stable for mobile and portable rigs, and (5) excel-lent quality (hard to pick from plate modulation).

It has one disadvantage (but the importance attached to this rests with individual) Reing an efficiency type of modulation a certain amount type of modulation a certain amount of power is lost when the carrier is modulated. The input to the final drops by approximately one-third when the carrier is modulated. Tests have been conducted and this drop in input power represents a drop of ½ S point in signal strength

Unlike other forms of Clamp Tube Modulation the carrier remains constant when modulated and the usual carrier surge in sympathy with the audio is not seen on the S meter of a receiver.

A point to note! Should the clamper tube to be modulated serve as a pro-tective tube on the final in an existing rig. it will cease to function in this manner when used as the modulator. therefore it may be wise to have some other form of protective bias should the

* 21 Hampton Street, Brooklyn Park, South Aus. Grid of GI G



YOUR STATION COMPANION.

the . Aust. Radio Amateur

Available now from-

DIVISIONS OF THE W.I.A. AND LEADING BOOKSELLERS IN ALL STATES OF AUSTRALIA.

ORDER YOUR COPY-4/6

Postage 6d. extra

Published by the Wireless Institute of Aus. THIS 1956 EDITION CONTAINS-

- An up-to-the-minute listing of Station Call Signs and Addresses of Licences of Transmitting Stations located in the Commonwealth of Australia and its Mandated Territories including VKI Australian Capital Territory and Z Call Signs
- One thousand additions, alterations and deletions since last edition, making over two thousand amendments since the 1954 edition.

 DX Countries. Prefixes and their Zones.

CU on 80!

or the first valve and, using the tuning wand, adjust Ln until the signal recedes into the murky distance. The adjustments of Li and Ln may interlock, likewise L5 and L3, so it's as well to check back and forth on them. Righto! Reback and form on them. Righton re-connect the filament supply and start listening. You'll hear them—if your beam works—and your location is al-right—and the're on!

Disconnect the supply to the filament of the first valve and, using the tuning

Operating: The transmitter should be

will drop by approximately one-third; this can be adjusted by varying the

ments necessary.

Switch to modulation (input to final

With audio applied to the grid of the clamp tube, no change in final plate current should occur before 100 per cent modulation is obtained Tests should be conducted to find the optimum setting of the audio gain

control No difficulty should be experienced with this modulator and it can almost be guaranteed that you will have a "fone" signal on the air first try should you decide to give it a go.

ANOTHER 2-MX CONVERTER (Continued from Page 3)

Anyhow, here is what you do to-morrow night. Tune in a medium strength signal (no more than 20 db. over 9) and check L1, L2 and L3 with the tuning wand. Gently approach each coil from the end with each slug in turn. If the signal goes up as the brace clud comes nearer, then the coil is too big.
If, however, it is the iron slug that gives It, however, it is the iron slug mat gives you another S-point, the coil is too small. Fix it it is better to do one coil at a time and start with L3, then L1 and leave L2 to the last. Then have a go at L5. When you have the coils right, either slug will cause a decrease right, either slug will cause a decrease in signal strength.

Now find one of the real hefty signals and adjust Ln. It is best to pick one of the ear-bashers for this adjustment.

After about a month's use you will get to the stage where you will think, "She's not bad," but I wonder if I can do a bit better?" This is the stage where do a bit better?" This is the stage where you cultivate one of the boys who owns a noise generator. You keep at him until he lends it to you and then you do the whole tuning procedure again, including adjusting the aerial tap and the amount of oscillator injection until the noise figure is as low as you can get it. If it is worse than 5 db. then I've wasted my time; if it is better than 5 db.—well, how's about dropping round and having a go at mine, pal? Cheers,

1956 REMEMBRANCE DAY CONTEST RESULTS

CONGRATULATIONS TO WEST AUST.

Last year I referred to the extremely high scores from contestants and commented that it seemed that saturation had been reached. With the VK6 Divnad peen reached. With the VR6 Div-ision winning the trophy for the third time, it is necessary to amend that statement, for their final score this year has reached the highest ever yet at-tained. Magnificent operating by the top six scorers and the outstanding entry of other logs has shown that careful organ-isation beforehand can be the deciding factor in winning the trophy.

The colossal score turned in by VK3ATN merits your special attention and congratulations.

The scores of the States were fairly The scores of the States were fairly well separated this year, much to the relief of the Committee because each year the entry grows larger. My thanks on your behalf go to the VKS Division Secretary, Brian Austin (VKSCA), who is not a member of the Committee, but who has hardly missed a session over the past two months; to the nick thanks of the thinks of the thin nor als organising ability and patience during the marathon task of checking; the other members of the Committee Reg SRR, Les SLC and Reg SQR; del last but far from lesst, those impressed stalwarts SPM, SRG, SHQ, SKX, SKO and SOR.

As we ran out of midnight oil last year, we had to exist on the calories and fluid provided by our long suffering but good hearted wives

Since postal arrangements were uncer-tain, no log was disqualified for late arrival: in point of fact this year seems to be the lowest yet, but the Committee was sorely tried in some cases where scores had not been added and in one instance points had not even been allot-ted for the contacts! In future no quar-ter will be given for incorrect logs; this Contest has been going too long for contestants not to know how to fill in their logs.

There were some funny incidents during the 24 hours. Les VKSUX working from my GTH and calling "VKSUX"—one poor VK4 wondered whether he was "contest happy"; a prominent Ballarat v.h.f. Ham who was prominent Ballarat V.n.t. Ham who was having fun just prior to the opening try-ing to get drive to an 807 and loading it into a 68 footer with the far end in the mud!; Bill, VK6DX, who worked all night, so he thought, until he looked at his log and found a couple of hours missing.

One sad incident occurred when one of my friends called a certain VK3 Amateur and was treated to a homily Amateur and was treated to a hormity on how stupid the whole Contest was and how he didn't care where he was an an how he didn't care when he was an an how he didn't care when he had been it hose who died for him hadn't answered the call and made the supreme sacrifice. As I felt ashamed that a fellow Amateur I felt ashamed that a fellow Amateur could so lower his dignity to make such statements for all to hear (and that in-cluded the general public), I am afraid that he was on my calling frequency! I apologised to my friend later.

Propagation conditions were almost Propagation conditions were almost ideal for the period and all bands were well populated. VK6, with its greater distances, had the edge on the other States as all bands were easy to work to the Eastern States. An interesting feature to the Committee was the total contacts made by each Division (as per contacts made by each Division (as per logs) and the average on the basis of 1 point per contact. These figures were particularly interesting and could form the basis for a modification of the scoring system.

There is no doubt that the Contest is There is no doubt that the contest is becoming more popular each year and I would remind you all that it is for a memorial to those who died that we do contest with each other. Please do not at any time let your striving for place-getting banish from your thoughts that selflessness and honour are the key-stones of our grand hobby. For be ye well assured-

"By your acts of grace G. M. Bowen, Chairman, Contest Committee,

	STATE	SCORES	
	Western	Australia	
VK6FD		Average	881
6RU	944	Licensees	206
6HK		Logs	97
6MK .			
6TH	848	Total Points	1296



Remembrance Day Trophy won by West, Australia

	South	Australia	
VK5EN	922	Average	. 813
5RG		Licensees	383
5WC	881	Logs	81
5JN	786		
5GV	V 752	Total Points	981
5MC	3 641		
	New S	outh Wales	
VK2AN	IR . 841	Average	719
2AF		Licensees	1112
2RS	803	Logs	
1PM	1 782		
2BC	569	Total Points	755
2PN	509		
	Та	smania	
VK7AI		Average	552
7LJ	597	Licensees	124
7BR	532	Logs	. 4
7DR	519		
7AB		Total Points	734
7YY	467		
	v	ictoria	
VK3AT	'N 1147	Average	67:
3AD	W 804	Licensees	1056
3HC		Logs	. 73
3AL			
3DG	2 508	Total Points	717
3ZU	426		
	New	Guinea	
VK9DE			431
9XK	480	Licensees	38
9FN	454	Logs	
	K 184	Total Points	. 49
900	2 109		
	0	haneland	

4MO

Logs	3
Total Points	493
Antarctic	
VK1IJ	978

Average icensees 335

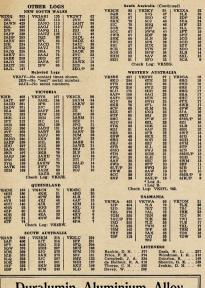
AWARDS									
Open									
VK1IJ	978								
2AHH.	808								
3ATN	1147								
4CC	840								
5RG	890								
6RU	944								
7LJ	597								
9XK	480								
2RS*	803								
* Special Awar	d.								

Phone	
VK2AMR	841
3ZU	426
4MO	447
5EN	922
6MK	870
7AI	682
9DB	959
C.w.	
VK2GW	436
3AHH	320

3AH	1		
4DI			
5MD			
5TL*			
6EZ			
7CH			
orther	T	ř	Tri

145

Listeners A. Stebbing .. 392



Duralumin Aluminium Alloy Tubing for Radio Aerials * LIGHT * STRONG NON-CORROSIVE

STOCKS NOW AVAILABLE FOR IMMEDIATE DELIVERY

DIAMETERS

RECOMMENDED FOR TELEVISION AND BEAM AERIALS

GUNNERSEN ALLEN METALS

88-92 YARRA BANK ROAD, SOUTH MELBOURNE Phone: MX 4624 (9 lines)

Telegrams: "Metals." Melbourne.

"Amateur Radio" extends hearty good wishes for a

Merry Xmas and

Brosperous Nem Bear to Renders and Advertisers

KIT SETS Are you interested in

standardised units or Kit Sets?

- CRYSTAL LOCKED CONVERTERS
- BASIC TRANSMITTER UNITS
- FREQUENCY MULTI-PLIERS
- LINEAR AMPLIFIERS
- MODULATORS
- POWER SUPPLIES
 - CONTROL UNITS

Then watch these columns under the magic sign



GLORAD

ENGINEERING SERVICES

291a TOORONGA RD., S.E.6 MALVERN, VICTORIA

Phone: BY 3774

YL CORNER

BY PHYL MONCUR

THAT EVENT OF GOOD CHEER-THE DINNER The following is a definitely unbiased and of course unprejudiced report and any resemblance to any member of the VK3 Division is most certainly intentional.

certainly intentional.

Girls, I must tell you about the dinner. But, of course, I was there, On I know the OMs seem can't got to their dinner, they think for hops; Well I joins their Institute, I gets some money meets a badge—but still no diec. Definition meets a badge—but still no diec. Definition which is not to the dinner. Then a great idea get a job as a waiters. Of course I had to change my appearance, but a bit of camoufage and even my OM didn't recognise me.

well even not ON "don't receptible me.
Well it was a wonderful evening, an affect of
well it was a wonderful evening, an affect of
receptible of right and hobble, in fact it was a
receptible of the receptible of the receptible of
the receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible of the
receptible

pp and re-usating it.

There wasn't much seepe when they sat down to dyne so the parabolic dish had to be pi on plate, even if it cheked you. From the feed soudient get any feed back where you were stiting, you swopped places and were saff ed, centre fed. Some even had to be fed through the the property of the proper

was exceedingly high. There was a great convolved about There was a great convolved here to the dark of the dark o

some industrially garbed, favouring the severally industrial was a substituted and type of creation. In the substitute of the substitute o

wore a fundamental two-piece suit in an alter-nating shade of navy blue in some static mater-ial with a sinusoidal pattern. Nocel would like to have been there but his wife had gone to the pictures and he had to go and meter.

The facial make-ups were many and varied—there was the clean-shaven, the dirty-shaven, the unshaven, the close-shaven and the mean miss (electric shaver type). And the moustaches—there was the toothbrush mhe, the curl-a-mhe, the Antarctic mhe, and handlebar mhe, and the half-a-mhe.

the noil-s-mas.

And the joules they were. Funny but all were identically the same joule-ery, the quaintiest little dee-wice, formed in the shape of a map of Australia with a fine tracery in gold of an electronic insignia across the centre. A most delicately executed work of art of priceless value.

priceies volue.

And the jobres. There was the one about—but no, I'm afraid that one is centored. Well there was the one about—but yet one too, but definitely umpririable. Just trading with the jokes. How about 3d. a joke, girls? We could put the proceeds towards their building fund.

building fund.

Now everything didn't go exactly according the Now everything to the Now everything to the Now everything the Now every excellent to be the Now every excellent to be the Now every event to the Now every even to the Now every even to the Now even the Now even

S.W.L. SECTION'

S.W.L. SECTION

Tritty, I must spoking for no note in last month's lease, but some unlusby elementation would like to have been unlusby elementation to text with the second like the last control of the second like the last control of the second like the second like the last control of the last control of

NEW SOUTH WALES

Stan Above, of the "Coolemon Key Kilckers Above, of the "Coolemon Key Kilckers Above, of the "Coolemon Key Kilckers Stan Above, of the "Coolemon Key Kilckers Stan Above, of the "Coolemon Key Kilckers Abo

I have received two letters from Barry Cart-wright, per media of the Vic. Award Manager, Gordon 3XU (thanks for onforwarding them Gordon). Barry is evidently very keen and makes several queries. I'll try to answer them as soon as possible, Barry.

VICTORIA

Sept. Group meeting.—At this meeting of the Group, Ron 3ARV gave one of the most inter-esting lectures ever presented to the Group. He spoke on Radio Astronomy. His listeners were

Compiled by Ian J. Hunt, WIA-L3007, 211 St. George's Road, Northcote, N.16, Vic.

kept enthralled by some most wonderful slides depicting the stars, planets, moon and other heavenly bodies, and Roris most graphic descrip-heavenly bodies, and Roris most graphic descrip-planet. He also explained how various types of radiation from space influence our radio conditions and described simple equipment for observing these radiations.

observing these racusuous.

October Group meeting. Len 3LN was present at this meeting and gave a most interesting talk in a constant of the control of the moment the talk was well timed. Hems of equipment brought along by Len were enthusiastically studied by Group members. Thank every much for your lectures Len and Ron.

were much for your lectures Len and Ron.

Michael Ida was back at the last meeting from the last seed of the last meeting from the last seed of the last seed o

QUEENSLAND

Don Bryant has favoured us with a letter from the Sunshine State. He tells us he is the first the state of th

SOUTH AUSTRALIA

SOUTH AUSTALIA

Shore Man Service of the service of

MR. F. H. Price, 10 Dunedin St., Mt. Hawthorn, Western Aus., has written saying that a few swils, there are contemplating forming a swils, there are contemplating forming move chaps, and are looking forward to hearing from many of you soon. So all you VKE listeners rally round and be in this. Let's know all about your activities and just what goes on.

Finally from our Bland friends we have two trom Rod de Ballour. No doublt you have seen from Rod de Ballour. No doublt you have seen from Rod de Ballour. No doublt you have seen the Port Arthurst and the Rod of engaged in the Rod of the Rod o

Well that completes our round-up of news for this month and we will now sit back and wait for more of your letters. Soon I hope to have caught up with my correspondence and all who have written contributing to this column will receive a reply from me.

To all readers, a Merry Xmas and a Happy New Year, May 1957 bring good listening.

DO NOT FORGET!

The closing date for copy for the January issue is 3rd December.

Amateur Radio, December, 1956





FROM

AMALCAMATED WIRELESS VALVE COMPANY PTY, LTD.

8-56

FIFTY-SIX MEGACYCLES AND ABOVE

NEW SOUTH WALES

NEW SOUTH WALES
The 2 mx spring field day was held in beautiful weather and quite a number of home and instead at 10 a.m. and relayed until 4 pm. on 21st Oct., 5%. Logs have been handed to the results are not yet to hand.

Each Wednesday preceding the monthly meet-for necturnal hidden ix hunts which commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. And the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the commence at 8 pm. and terminate at 8.30 pm. Results of the terminate at 8.30 pm. Results

as a pin, and terminate at 120 pin. Recalls of Direct 2012, assisted by Chair 2017, was given the job of going of the pin and pin and

We had a very warm pleasant owning for nearly as the second of the second of the nearly as big a turn-up as on some of those foreign cold rights during the winder months. The second of the second of the second of the good hant, seven car loads turned up with that good hant, seven car loads turned up with that took them reund the suburbe of Toorak, Ken-ter they went sire for 16 m last a class that took them reund the suburbe of Toorak, Ken-ter they went sire for 16 m last a class that took them reund the suburbe of Toorak, Ken-ter Liv, That bound of a for slowly traversed made things really tough with all the tall build-less. Then he cut the time and used speech, very pleased to hear the familiar voice of our traverse of the second of the second of the second property of the second of the second of the Toorak to the second of the second of the term of the second of the control station, Bob 30J, back on the job again. The final location was held at the home of AO, AO, C.P. class student, Bert Siebbins, and we grow the first of the state of t

and you can be certain that the low will make A. At the last V.M. Group meeting, Mr. D. F. Watson, Group Engineer of the P.M.G. Convergence of the P.M.G. Convergence of the P.M.G. White of the P.M.G. The convergence of the P.M.G. type of relays the points were silver, plantum, etc., and many constructional details which determine relays. He answered many questions as he went along and concluded by giving a seven page pamphlet constaining a description of all types

of service relays to each member present. As well-being a service of the relation of the relat

anne an hell year, that he one both terr rules come an hell year, that he waved to the winner certificate will ame be avaried to the winner and the second of the second o

SOUTH AUSTRALIA

The oscillation of the collection of the collect

indignificant. It is all to be collected to obtain indignificant. It is all to be excluded to obtain consumerations.

Commence of the collection of the coll

again. Gees 5BU and Reg 5QR have had come fur George 8 is simals seroes even on a my by March 19 in the second of the second of the by merely modulating the coellistor train of their and Seg continue to play chees via 2 and 1 mx. The second of the second of the second of the 10 in the second of the second of the second property of the second of the second of the going. My own activities have been brief on 2 mx this month, mainly confined to doing a

WESTERN AUSTRALIA

children with the usual very good supper as consistent of the construction of the cons

Low Drift Crystals

AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 10 Mounted £3 0 12.5 and 14 Mc. Fundamental

Crystals, "Low Drift." Mounted only, £5.

THESE PRICES DO NOT INCLUDE SALES TAX.

Spot Frequency Crystals Prices on Application.

Regrinds £1/10/0

MAXWELL HOWDEN

15 CLAREMONT CRES... CANTERBURY, E.7. VICTORIA

DX ACTIVITY BY VK3AHH+

XVIth OLYMPIAD, MELBOURNE, 1956 ON BEHALF OF THE AUSTRALIAN DX FRATERNITY AND THE WIA. OLYMPIC GAMES COMMITTEE, A HEARTY WELCOME TO ALL VISITING AMATEURS. MAY YOUR STAY IN VK BE A MEMORABLE ONE, FULL OF ENJOYMENT AND PLEASURE!

PROPAGATION REPORT

8.5 Me.: Contacts with the North American continent and Pacific Islands took place around 0900-1100z. Other conditions were not observed. 7 Me.: DX contests during the month of Octo-ber enabled this band to regain its full DX usefulness. Conditions to the American contin-ents were reported between 06502 and 1000z. Between 18052 and 2002z. the band opened to Africa and Europe over the short path, while Africa and Europe over the short p long-path openings to Europe were around 0700-0800z. Contacts with Asia were possible around 2000-2100z.

Asia were possible around 2009-2100z.

14 Me.; As was to be expected, this band displayed fair to good conditions to all continents at reasonable times. European conditions existed around 0600-6900z, 1400-1500z, and 2100-2200z. The hand opened to Africa at 1400-1500z and 1800-2200z. The American continents seemed to be represented round the clock.

to be represented round the clock.

21 Mc.: Here reports show that the band opened to the American continents between 1800z and 6700z, to Europe 0800-0800z, 1200-1460z, and 1900-2100z, to Africa around 0800z, 1000-1200z, and 1900-2100z.

27/28 Mo.: North and South America were represented between 2100 and 0500z, followed by an African opening 0500-0700z and a European opening 1000-1200z.

NEWS AND NOTES

According to press reports, German Saarland, since 1945 occupied by France, will be returned to Germany as from the 1st January, 1957. It can be assumed that 984 will not count as a separate country after that date.

One of the greatest DXpeditions came One of the greatest DAPeditions came to an untimely and very regrettable end. Having visited several rare DX spots in the Pacific, Danny Well lost his yacht in Australian waters. Anyhow, Danny, you did an excellent job for DXers everywhere, and, I am sure, all of us wish you best of luck and hope that you can continue your single-handed sea travel around the world at some other time

VK1RW, of Cocos Island, has changed his call sign to VK9AJ (from 5WO). Does W6ITH intend putting Spratly Island (9°N. Lat., 11°E. Lon.) on the Ham Radio map? News came around a few corners: F9RS to West-Gulf DX Club to W6YY to VK3AHH.

Who said you can't work DX on s.s.b.? It has been reported that VK3AEE managed a W.A.C. round-table QSO with aged a W.A.C. round-table QSO with mutual readability. On the 28th Octo-ber at 0800z he contacted the following stations on about 14300 Kc.: DL4SV KA2FC, CN8GD, PY2JU, W5SVP G3HRO and ZL3PJ, all on s.s.b. (from

3SK) ZC3AC is active on 14010 Kc. (from W6YY)

Chas VK3IB, ex-VK1AC, is getting ready for another trip to the cool south. VK5WO reports that JZ0ACK and JZ0ADM have changed their call signs to JZ0PC and JZ0PA, respectively.

operating on 21012 Kc., is looking for VK contacts on 21 Mc. c.w., tuning the entire c.w. band (from 2YL).

† Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic. * Call signs and prefixes worked.

Following my paper in the October issue, several correspondents have gone to a lot of trouble in supplying more detailed information on DX conditions, particularly as far as the times of con-tacts are concerned. Well known DXer and editor of this page until 1952, Frank VK2QL, sent an extremely useful report. Thank you, gentlemen!

QTHs OF INTEREST (from W6YY, NCDXC, 3ACN, 5WO, 7LZ, BERS195 and Rod de Balfour) YN1BW-C/o. American Embassy, Managua,

YNIBW—C/O. American Nicaragua. HZ1AB—M/Sgt. Jeff D. Harman, RFD 1, Suisun, Calif. U.S.A. HP1EH—Box 189, Panama City.

HPIEH—Box 189, Panama Unty.

SVOWE—H. B. Wood, Alexandrow, Diakew 13,
Rhodes, Greece.

SMSKV—Via SMSKV.
ZDSDT—Box 39, Zomba, Nyasaland.
FESAE—M. Veber, Box 408, Douals, French
Companyation.

Cameroons.
SVOWJ—Air Attache Radio Club. APO 208, C/o.
Postmaster, New York, U.S.A.
ZD2GWS—G.P.O., Buea, Nigeria.

ACTIVITIES

3.5 Me.: Frank 2QL reports W4*, W6*, W8*, KH6*, ZK1*, W9. 7 Me.: 20L contributes G8JR* (0700z), XW-8AB*, CE3AG*, DUTSV*, and Z95, Z85, HB, DL, YU, FE, Laurie 2AMB adds Z85AH*, Z82Q*, VETAG*, K4AQL/KG8*, and VSIGV. Dave WIA-15098 heard DUTSV and Rod & Balfour heard We on phone, and JAIBWK. 3AHH work-44 CDFUSE (1900*). heard Ws on phone, ed CR7BS* (1900z),

benef We on thome, and JAHSWE. BAHH worth14 Me. C.W.; DII. PY. C.P.; TYKA: V.O501W. BRAM. VORCE: and ZDIPG, WORK501W. BRAM. VORCE: and ZDIPG, WORK1201W. BRAM. VORCE: and ZDIPG, WORK1202W. BRAM. VORCE: and ZDIPG, WORK1202W. BRAM. VORCE: and ZDIPG, WORK2600W. BWH. CROWN BRAM. COUNTY, TVI.
2600W. BWH. CROWN BRAM. CROWN, ZWIA2600W. BWH. CROWN BRAM. CROWN, ZWIA2600W. BWH. CROWN BRAM. CROWN, ZWIA2600W. BWH. CROWN, ZWIA1201W. C IBA, CXIBZ, KC4USV

14 Me. A.m.: 2AMB: PYIMK*, HC2BH* HK3PC, CX2OZ.

14 Me. S.s.b.: Rod de Balteur heard the fol-lowing s.s.b. stations: XE2JK, VS6BE and W6. See also the item under News and Notes! 21 Me.: 20L: BVIUS*, FASCR*, ZSTC*, PY-1ADA*, VOSGC*, VO4KPB*, KP\$KD*, CE\$AG*, LUNA*, TSTP*, E72*, EA*, TITTA*, TITZW*, ZSSU* and VP\$HT, GDS*KN, CN8BK, E72US, YV, ZC4NS, ZAMB: ZSIDO*, ZAPL: VUZIF*,

DL*, OE*, PAO*, ZS2H*, JA*, and HPIEH. SHG: LU4DMG*, HZ1AB*, VESMA*. Les SPN: LX*, FA3*, TG1*, VP2*, CX*, PY*, SWO: PY1ADA*. FAR WILL FORM CX PRIV. WO PYLLAR PRIVATE AND PYLLAR PYLLAR

Johnson, Ver. were received by: 9D1: 70770, WIAA, POQVIPC, EARAU, SQL: YOTH, WORAG, VPRAZ, ZESZC, OGGGS, HIJAA, 2AC-FORB, ACSPN, YVAAA, AMB: YJIAA, VAGLQ, SHO: CESSP, MIB. SHI: EARSK, HIRNY, VYSFI. EARAC, YABB: TICK: CPSKE, YPAFP, VYSFI. PRAZ, YABB: TICK: CPSKE, YPAFP, VYSFI. PRAZ, YABB: TICK: CPSKE, YPAFP, VPSFI. BERSIGN: VQ4ERR, VQ5LQ, VSHIB. Sed Balious: ZSSOV.

Thanks to W6YY, the Northern California DX Club, and VKs 2QL (QSP 2DI, 2ACX), 2YL, 2AMB, 2APL, 3HG, 3SK, 3ACN, 4HD, 4KJ, 5RK (QSP 3HI, 5HM, 5PN), 5WO, 5UF, BERSI96, WIA-LJOSS), and Rod de Balfour (QSP TLZ), Another year is approaching its end and brings us its festive season. A Merry and Peaceful Christmas to fellow Christians everywhere.

PREDICTION CHART FOR DEC., '56



TRANSISTORS



IN AUDIO AMPLIFIERS

Although in principle a large number of circuits can be obtained by combining grounded emitter, grounded base or grounded collector configurations with transformer or R-C coupling, in practice transistor audio amplifiers tend to follow a simple pattern. A typical circuit can be considered to have grounded emitter stages in cascade, with R-C coupling, and with d.c. stabilisation provided by the potential divider and emitter resistor method

The maximum power gain available with perfect matching (and transformer coupling) when the effective load resistance

in the collector circuit RI = 1/1'22. I'out and the effective

source resistance
$$R_s = \sqrt{r'_{11} \cdot r'_{in}}$$
 is
$$\left(\frac{\alpha'}{\sqrt{r'_{11}} + \sqrt{r'_{in}}}\right)^2 \cdot r'_{22}.$$

R-C coupling is preferred generally to transformer coupling for low cost and phase shift and good response, but the power gain of each stage then arises solely from the inherently high current gain of the grounded emitter stage, and the higher gain which would be available by impedance matching with the transformer is not achieved.

The factors entering into the design of an R-C coupled transistor cascade are not difficult to appreciate; many of them are similar to those encountered when working with valves. The collector voltage and

current are limited by d.c. ratings Vemax and Iemax, and by a.c. ratings ve(pk)max and ie(pk)max. For high gain and output power the battery voltage should be high, but a lower voltage and hence smaller current drain is more economical. The high value of collector load resistance required for maximum gain cannot be obtained with R-C counling, as there is no advantage in making the collector load very much greater than the effective parallel input impedance of the next stage. In addition, the load resistance and collector current determine the voltage available across the transistor, which is

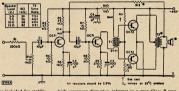
also reduced by the emitter resistance included for stabilising. The collector current should therefore be small so that a large collector load resistance can be used; on the other hand a large collector current swamps the variation in col-After allowing for these various conflicting claims, the

number of stages is chosen to give the required overall gain when feedback is applied. Since the signal swing in the early stages is small, the d.c. working point can be chosen for low

current drain (and noise), provided they have potential divider and emitter resistor d.c. stabilisation. The power gain in the grounded emitter R-C coupled stage can be calculated in the grounded emitter R-C coupled stage can be calculated from $(a^{\alpha}) R_{\perp} I f / I_{m}$, the ac. current gain being a^{α} and the voltage gain $a^{\alpha} R_{\perp} I f / I_{m}$. This expression assumes that R_{\perp} is very much smaller than $r'_{\perp 2}$ and $r'_{\perp m}$. Here, a^{α} , $r'_{\parallel m}$, etc. are Small-Signal parameters given in published data and computed for the working point employed. As the load on an R-C coupled stage is formed

by its collector resistance in parallel with the input resistance of the following stage, the power and voltage gain for each stage can be calculated by working backwards through

Class AB push-pull operation in which the bias corresponds very nearly to that for true Class B operation is a natural choice for the output stage when a transistor amplifier is to be designed as a power amplifier, that is, to give the highest output power permitted by the collector dissipation p_{cmax}, without objectionable distortion. The quiescent power consumption is very small and the efficiency is high. The Mullard OC72 is intended for this mode of 15 ngn. Ine Mullard Ov.7.2 is intended for this mode of operation. An actual circuit is shown in the diagram, the output power being 200mW for 10½ (total harmonic distortion for an input of about 6mV at Cl or 900mV at Rl. Negative feedback is applied over the driver and output stages by Rl.3, which is matched to the louddepeaker. A small amount of bias is provided to the OCT2's by the potential divider RT1-R12, which is iffective in reducing the



high crossover distortion inherent in a true Class B transister output stage

The value of R11 must be chosen from the range 6.8, 6.2, 5.6, 5.1, 4.7, and $4.3k\Omega$ so as to adjust the total quiescent 3.6, 3.1, 4.7, and 4.382 so as to adjust the total quiescent current in the output stage to 1.3mA+10% at 20°C or 1.6mA+10% at 25°C. The operating ranges with speech and music are 15°C to 45°C ambient temperature and 4.5V to 2.7V (or even 2.0V, depending on the distortion tolerated by the listener).

MULLARD ALL-TRANSISTOR AMPLIFIER - TRANSFORMER DETAILS

Output Transformer
"C" core, 0.004 in, surio, English Electric HWR/30/8/5.
window length is breacht — 2 in, x § in.
Length of flux path = 6.34 in; Net Area = 0.178 in.
Length of flux path = 6.34 in; Net Area = 0.178 in.
Length of flux path = 6.34 in; Net Area = 0.178 in.
D.C. resistance = 1.45 ohms + 2.45 ohms.
D.C. resistance = 1.45 ohms + 2.45 ohms.

wire. D.C. resistance = 0.57 ohms. Shunt inductance > 0.5H



ISSUED BY THE TECHNICAL SERVICE DEPARTMENT:

MULLARD-AUSTRALIA PTY. LTD. - 35-43 CLARENCE ST., SYDNEY (BX 2006); 592 BOURKE ST., MELBOURNE (MU 3266) WITH MULLARD LIMITED, LONDON; MULLARD OVERSEAS LIMITED

FEDERAL, QSL, and DIVISIONAL NOTES



Fed. President: W. T. S. Mitchell, VK3UM.
Fed. Secretary: L. D. Bowie, VK3DU, Box
2211W, G.P.O., Melbourne.
GStreet, Box Bill, E. B. Vic.
Awards Manager: A. G. Weynton, VK3XU,
5 York Street, Bonbach, Vic.
VKXV SOUTH WALES

NEW SOUTH WALES
Persitant: Im. Courbon, VCNVC.
19 81 Pouls Road, Balcowith, NAW, WIGARIU,
19 81 Pouls Road, Balcowith, NAW, William,
19 81 Pouls Road, Balcowith, States, Soldow,
19 Claude, Control of the Courbon, 19 Claude,
19 Claude, Naw, Control of the Courbon,
19 Clauded, Aye, Control, Naw, 19 Clauded,
19 Clauded, Aye, Control, Naw, 19 Clauded,
19 Clauded, Naw, Control, Naw, 19 Clauded,
19 Clauded, Naw, 19 Clauded, Naw, 19 Clauded,
19 Clauded,

President: G. Dennis, VK3TF.
Secretary: F. G. Bail, VK3YS.
Administrative Secretary: Mrs. May. C.O.R.
House, 191 Queen St., Melbourne.
Meeting Night: First Wedneaday of each month
at the Radio School, Royal Melbourne Technical College.

Divisional Sub-Editor: Phyl Moncur, 235 Union Road, Ascot Vale. QSL Bureau: Inwards and Outwards—W.I.A., 191 Queen St. Melbourne, C.1. Vic.

191 Queen St., Melbourne, C.I, Vic.
Zano Gorespondentic Gentral Western: W. Z.
Zano Gorespondentic Gentral Western: W. Zano
Western: W. Wines, 45 Cronley St., Warrnambool, and W. Zimmer, VXAAWZ, 79 Skene
VK3ALE, 72 Orr St., Shepparton; Far North
Western: M. Folic, VXSACZ, 101 Lumon Ave.,
waters: M. Folic, VXSACZ, 101 Lumon Ave.,
shall Ave., Moe; North Western: C. Case,
VK3ACZ, Cumming Ave., Birchip, C. Case,
VK3ACZ, Cumming Ave., Birchip.

OHEENSLAND

President: Frank Bond, VKZM.
Secretary: W. J. Raffer, VKCPB, Box 683J.
GACO, Britzburnen b Friday in each month at
the State Service Union Rooms, Elizabeth
Street, Britzburnetter: F. B. Bond, VKZM,
DB W. J. Raffer, VKGPR.
GRI Bereau: Unwards—J Fles, VKSIF, Wanda
St., Burandia Outwords—Miss Clair O'Brien,
St. Januandia Outwor

Zone Correspondents: Maryberough: R. J.
Glassop, VK4BG, 30 North St., Maryberough;
Townsville: R. K. Wilson, VK4RW, Hogan
St., Stuart, Townsville.

SOUTH AUSTRALIA

SOUTH AUSHALIA
President: W. J. Bulling, VKSKX.
Secretary: B. W. Austin, VKSCA, Box 1234K,
G.P.O., Adelaide. Telephone: UX 2521,
Meeting Might: Second Tuesday of each month
at 17 Waymouth St. Adelaide.

Divisional Sub-Editor: E. C. Daw, VK5EF, P.O. Box 44, Gawler, S.A. QSL Bureau: Geo Luxton, VK5RX, 27 Belair Rd. West Mitcham, S.A. (Inwards and Out-

WESTERN AUSTRALIA President WESTERN ADSTRALLAS
Fertiles, Mond, WKESTERN BERN MING, G.P.O.,
Perth, W.A.
Meeting Place: Perth Technical College Annexe,
Resident Night: Third Tuesday of the month,
Divisional Sub-Bellior; E. J. R. Cowles, WKEEL,
GSL. Bareau; Jim Rumble, WKESIU, BOX 2319,
GSL. O., Perth, W.A. (Inwards and Outwards).

TASMANIA President: F. J. Down, VKPIG.

B. G. D. Hobst.

Mettin Yikil: Trit Wednesdy, VKPMI, Box 271B,

Mettin Yikil: Trit Wednesdy, VKPMI, Box 271B,

Mettin Yikil: Trit Wednesdy, G. each month

Jibohr.

G. D. Box 18 J. A. Trit Wednesdy, T. Marchell,

J. B. Marcheller, H. J. Zirocken, VKTER,

G. F. D. Box 18 J. Zirocken, VKTER, M. Town,

G. F. D. Box 18 J. Zirocken, VKTER, M. Town,

W. L. B. Marcheller, Wednesde, M. J. Briges,

W. L. B. Marcheller, M. J. Briges,

W. L. B. Marcheller, M. J. W. J. Briges,

W. B. Barris, F. R. S. Wesseller, W. W. B. Barris,

M. B. Barris, F. R. S. Wesseller, W. B. Barris,

M. B. Barris, F. R. S. Wesseller, W. B. Barris,

M. B. Barris, F. R. S. Wesseller, W. B. Barris,

M. Barris, F. R. S. Wesseller, W. W. B. Barris,

M. Barris, F. R. S. Wesseller, W. B. Barris,

M. Barris, F. R. S. Wesseller, W. B. Barris,

M. Barris, F. R. S. Wesseller, W. W. B. Barris,

M. Barris, F. R. S. Wesseller, W. B. Barris,

M. Barris, F. R. S. Wesseller, W. B. Barris,

M. B. Barris, F. R. S. Wesseller, W. B. Barris,

M. B. Barris, F. Wesseller, W. B. Barris,

M. Barris, F. W. B. Barris,

M. Barris,

M. Barris, F. W. Barris,

M. Barris, F. W. Barris,

M. Barris,

M.

St., Burnie., Tas.

President: F. M. Nolan, VKSFN.

Secretary: Mr. H. Young. C/o. P. & T. Dept.,
Port Moresby.

Divisional Sub-Editor: To be appointed.

QSL Bureau: R. Lloyd, VKSZAL, C/o. Commonwealth Dept. Works. Port Moresby.

FEDERAL VK0 (ZERO)

Following the allocation of the prefix VK1 for those Amsteur Stations operating in the Australian Capital Territory, a further change has now taken place with regard to those stations which operate from the Antaretica. tions which operate from the Antarctica.

The prefix of VKI (for Antarctica) has been withdrawn and in future VKO (zero) will be allocated to these stations.

It is expected that the change over will take place when relief parties arrive at the various bases towards the end of the year.

EMERGENCY CO-OPERATION IN GREAT BRITAIN

In the November issue mention was made of amendments being promulgated for Amateurs in Great Britain. The "Amateur (Sound) Licence" has been varied and the following new Clause 1 (1) (c) has been added:

Clause I III (c) has been addedt—

To use the Station, as part of the safe.

The safe is a station of the safe of the safe.

The safe is a station of the safe of

FEDERAL OSL BUREAU

FEDERAL QSL BUREAU

Amthering all he phosed to hear of the
Amthering with he phosed to hear of the
Amthering who is not considered the
Amthering who is note case enryed two assistant
word (VKLIW). Prof. Million (VKLIKA) and
word (VKLIW) by Mallion (VKLIKA) and
the investigate will be made by ILILI The
the investigate will be made by ILILI The
like the profession of the profession of a
like the profession of the profession of a
for regrets an honory of affective class was
to regrets an honory of affective class was
to regrets an honory of affective class was
to regret and the profession of a single control of the
profession of the profession of the
additional of the profession of the profession of the
land with the profession of the profession of the
had word addressed via flore Kong and Canton
within had been returned undertweaks.

belley heart statistical "Station." No explores that he letter that here involved no discovered was forthcoming. So it aspects to be a gamile of the statistic statist

Rua D. Pedro V. 7-4, Lisbon, Portugal.

Dig through your post chaps and see if you

Dig through your post chaps and see if you

Box 70, Tonsberg, Norway, Heele Blackers

Box 70, Tonsberg, Norway, Heele Stations

worked, but none to hand so far. Heige has a

worked, but none to hand so far. Heige has a

of the Norway and the factory ship Balacta

which called at many of our ports during 1950

erroute to Antarctica.

enroute to Antarctica.

An interesting QSL addressed to BERSi95 was from an aircraft mobile station, operated, by Jack Wanzer (now WoRHJ), under the call sign WoRHJ/AM. At the time Treb heard the signal from the aircraft mobile on It Mc., the plane was flying at 9500 feet between Darwin and Djakartia. and Djakarta.

Bill Storer (VK2EG, ex-VKiBS and VK1EG)
will be in Melbourne on P.M.G. duties for about
a month covering the Olympic period. Hopes
to bend the elbow with many of his old

a month crowsing the Commits period. Hosele-ment of the College modification of the number of call districts in modification of the number of call districts in conditions of the WACLE, Associa. As from the College of the Internal College of the College of the College of the Astronomy of the College of the Market States, "of a College of the Internal College of the College of the Internal College of the College of the Market States, "of a College of the College of the Internal College of the College of the Internal College of the College of the Internal College of the College of the College of the Internal College of the College of the College of the Internal College of the College of the College of the Internal College of the College of the College of the Internal College of the College of the College of the Internal College of the College of the College of the College of the Internal College of the College of the College of the College of the Internal College of the College of the College of the College of the Internal College of the Coll

an unfortunate cleavage in that country. The handling of cards seems to be the main bene handling of cards seems to be the main bene will be the seem of the card of the S.A.B.C., while this latter body, whose address is Box T. Blarred. Sweden, delivers of the S.A.B.C., while this latter body, whose address is Box T. Blarred. Sweden, delivers of their membership in either the seem of their membership in either card of their membership in either card cardina that big peakages of cards dating back to list as bying in the S.S.A. Bureau unopened. 1985 are bying in the S.S.A. Bureau unopened.

1945 are lying in the S.S.A. zuresu unopenue. We hope this unfortunate schlien is, quickly with the correct address for cards for Amsteur. The correct address for cards for Amsteur. But Poursett, Box 89, Kingston, Camberra. If Bud Poursett, Box 89, Kingston, Camberra, If Bud Poursett, Box 89, Kingston, Camberra, If Bud Poursett, Box 89, Kingston, Acta Camberra, If and the address as several packages addressed to Kingston, A.C.T., were tried at every Kingston, A.C.T., were tried at every Kingston, A.C.T. Ray Jones, VK3RJ, Federal QSL Manager

NEW SOUTH WALES

NEW SOUTH WALES

Appreciatedly 70 member, were present at Appreciated by 70 member, were present at the property of the present at the presen

portable. Ar. Fr. and answered questions on Arrangements have been concluded for the budget and a second on the Indian and Arrangements have been concluded for the budget of the first second of order and the Indian and I



R.M.B. 585, Anthony Street, Blacktown, N.S.W. Let's keep him busy and do something con-

BUNTED BRANCH

HUNTER BRANCH
The University of Technology was the location of the University of Technology was the location of the Hunter Branch. One film on the meeting of the Hunter Branch. One film of the Hunter Branch. One film

Jim McKay lectured on the construction and erection of antenna masts and gave the meeting some interesting hints on guying and anchoring the masts. The 24 members present showed their interest by the number of questions asked. Pollowing Jim's lecture two more films, one a colour, were shown, again dealing with t.v. attenase and their construction and testing sethods. The meeting closed with the usual

selfentiale and these conformation and assume the conformation of the conformation of

TIPPER WINTER GROUP

Were a contract that another Ham has been seen as the contract that another Ham has determined by the contract that another Ham has been determined by the contract that the c

SOUTH WESTERN ZONE I think by this time the chaps of this zone will have recovered from the Convention and

are one again either building or using the gene welcome visit from Eric EDV, Fergy and family visit were visit from Eric EDV, Fergy and family visit were visit from Eric EDV, Fergy and family visit were visit from a visit of the con-at Quinty is still very active on 144 Me. and at Quinty is still very active on 144 Me. and the talked year serble into the stuff, also. However, it is good tun playing around, into EDW 255 44 Meyer is active from home GPI ZDD and was impressed with the mighty signal ZDD and was impressed with the mighty signal visit of the constraints of the constraints of the eccessionity from Wagas. Haw not bend ALD 44 Me. after the visit Lyn AgD is active occessionity from Wagas. Haw not bend ALD

COALFIELDS AND LAKES

COALPHILDS AND LAKES

Coc. 2KR and other Wey Wey gang have the

Fig. 10 and 10 and 10 and 10 and 10 and 10 and

Best 10 and 10 and 10 and 10 and

Best 10 and 10 and 10 and

Best 10 and 10 and

Best 10 and 10 and

Best 10 and

VICTORIA

At the Newmers general meeting, Maurie ture on his recent trip to Central Australia from the control of the Central Australia from the Central from



3AMA, he has previously held the call 5MA and was one of the original radio crew in the Flying Doctor Service and his name appears on the tablet at the John Flynn Memorial alongside the names of All Traeger and Harry Kauper. The following were welcomed as new members of the Institute—Messrs. R. J. Beames (3ZDM), K. J. McLachlan (3ZDK), H. E. H. Mitchell (3AEM), and J. W. Ballinger (3NK) is full members, and Messrs. L. F. Beal and

A. J. Lyons as Associates.

Owing to the Olympics, the Bi-monthly feramble will not be held in December. Den't look now, but that stork has been around again. Congratulations are extended to Jack 3WR all alaughter, Karen Lee, who arrived on 18th betober. All doing well, especially the father, lee's just fine?

STATE CONVENTION

A very successful and enjoyable State Convention was held at Leongatha, a most picturesque country town in the Gippaland area, on the week-end of 3rd and 4th November. he week-end of 3rd and 4th November. Approximately sixty sat down to the dinner control of the same and the s

orid. Clinical and Mrs. Bond, of Leongatha, wer usets of honour at the dinner and were please o meet Amateurs and their families from Melourne and other parts of the State who had avelled to Leongatha for the Convention. ravelled to Leongatha for the Convention.

After the dinner the ladies retired and spent
he evening at the local picture theatre while
he OM's got down to business. Among the subects discussed were: Alteration of zone boundries, Amateur interference to commounication
services using equipment covering Amateur
ands, and alteration to the 144 Mc. band. ands, and alteration to the 144 Mc. band. Unfortunately, because of the weather, which unfortunately possibly have been worse, the Sunday sepile the very cold weather and unceasing sin, it was still a very excellent day. After weather the sunday of the sunday of the weather than the sunday of the weather than the sunday of the weather than the sunday weather than the sunday weather than the sunday weather sunday weather weather sunday tory which was most interesting to all. The pinnic lunch which was to have been d at the Moss Vale Park had to be transited to the pinnic was a superior of the most valence of the was pinnic pardine's, S.S.S.C. of things backed by the XYLs of the Easterne, a mighty fine effort on their part, baking sixty hungry wireless folk.

After lunch a tx hunt on 80 mx was run and was won by Laurie 3ALV, second was Ted AEH and third Len 3LN, who were all presented with a very nice piece of radio equipment as their prize.

After the hunt the Convention wound up with cheerios, 73 and a wish in everybody's heart to all meet again for this grand gettogether next year. Congratulations to Ron Jardine 3PR and the boys of the Eastern Zone for a very well organised and most enjoyable Convention.

The MATRIE TRANSMITTER HUNY. The lack of the Sin more transmitter hunter to The Lack of the Sin more transmitter hunter to continuous rain, the une cause of an extra part of the since part of 80 METRE TRANSMITTER HUNT rance, the hunters were very wary of intruding. The result of the hunt was a dead-heat ba-ween 3LN's son and 3EM's daughter. What's Il this about, what's going on between our ryou'll have Ed chasing you with a gun-econd place was also a dead-heat, between ALY and 3AOG, and third place went to ADDI. Gentley the dead of the second place went to ADDI. Gentley did not come last this time, no of ourse he didn't, he came second last! The hunt encluded with the usual picint tes.

SOUTH WESTERN ZONE

The store settivities this month have been been been saded to the activities. Conden RADV at the saded to the activities. Conden RADV at the saded to the sade activities. Conden RADV at the saded to the sade activities. Conden RADV at the sade activities of the sade activities

was won by 3AArt-oatte-graite, me me.

We take the opportunity to thank Bob 3GR,
who did a marvellous job in every way, also
who did a marvellous job in every way,
There was one thing that was very unfortunate,
Vic. Clarke broke his gear box in the tx hunt.
Vic. Clarke broke his gear box in the tx hunt.
We clarke broke his gear box in the tx hunt.
We clark broke his gear box in the tx hunt.
We clark broke his gear box in the tx hunt.
We can be seen that the clark broke the clark broke was a seen and prosperous new year, to all members and XTLs. YIs and barmoushes—Bill Wines.

NORTH EASTERN ZONE

NORTH EASTERN ZONE

Three MAGO and XYL eas being congrabalated on the seddliten of a daughter to the family on the seddliten of a daughter to the family on the band, year of the seddliten of a daughter to the family on the band, year of the seddliten of the sed

The State Convention hald at Leongatha proved a great success, mainly due to the very capable organising by Ron 3PR and XVI. A total of 55 sat down for the dinner after which he YLs and XVIs and harmonics went to the pictures, while the OMs got on with the business of the eyening.

pictures, while the OMs got on with no business. Rex AVICam Gween 3US have some nice wh.f. gear for 2 mx and sport a t.v. set. Jim 3DI has some nice equipment from 80 to 2 mx, also a partly built t.v. set. Rom 3FR has quite a partly built t.v. set, Rom 5FR has quite a the lower bands. ef floor, mainly interested in the lower bands. A note of thanks and appreciation go to Rom SFR and his XIL. who both looked after the

GRELONG AMATRUR RADIO CLUB

Recently Cyril Ham entertained member with Mr. J. Firth at a silde lecture—the top was "A Journey into Central Australia." T speaker told the audience of experiences of I journey by truck over some picturesque count between Mildura, Adelaide and northwards. between Stildurs, Adelside and northwards. Many members visited the convention at Balarst and a great time was had by all. The sees S.W. Zone members in the person of AMRS, ADD and SADG well in the placings of prize in the revenue Ball. W.C. Clark and Bill AWR. SADW and BALL W.C. Clark and Bill AWR. SADW and SADG well in the placings of prize in the revenue Ball. W.C. Clark and Bill AWR. SADW and SADG well as the prize of the prize of the saddle saddle

others.

Chas 3XH delivered an interesting talk with gear to match on transceivers. Chas spoke on his experiences with the tx and rx he constructed for 40 and 80 mx. The gear is also compact enough for mobile operation. compact enough for mobile of the great is also Many of the boys visited the Leongatha Convention but as this goes to press insufficient years are the state of the convention but as this goes to press insufficient years are the convention but as this goes to press insufficient years and the least the convention of the coping of HSUT. We hope he won't be too ardent a supporter of this new medium. Kmas Season. Fiftends our best wishes for the Kmas Season.

> QUEENSLAND BRISBANE AND DISTRICT

BRIBBANC AND DIFFICIT

More womths are Council decided that a reterm of the Council Council Council

target of 200 members for the Division by its
target of 200 members for the Division by its
target of 200 members for the Division of the
target of 100 members for the Division of the
target of the Council Council Council

Apart from the renoved interest in Blanch and
Apart from the renoved interest in Blanch and
Apart from the renoved interest in Blanch

Apart from the Council Council Council

Apart from the renoved interest in Blanch

Apart from the Council Council

Apart from the Council Council

The Council Interest in Apart for the Council

The Council Council Council Council

The Council Council Council Council

The Council Counc

steepmen like he did best in September The authorities seem to be becoming a financial formation of the seem of th with the same optemns. When you look this will. AD XCC. listings you will find or high scores and from experience we know we have a supervised to the properties of the properties of the properties are a pair of 80% and runs less than 150 w last of 80% and runs less than 150 w last of 80% and runs less than 150 w last of 80% and runs less than 150 w last of 80% and runs less than 150 w last of 80% and 150% and 150%

let's just wait and see what happens.

By now all Harm in Gueenialmd have receive
gency. Vince 4VJ. and the Emergency Regency vince 4VJ. and the Emergency Rework, put a lot of work into complising the pro
made the pian almost foolproof. One importan
made the pian almost foolproof. One importan
made the pian almost foolproof. One importan
inger in the pian almost received and the server of arm he in the Dangence
of the emergency or arm he in the Dangence
gency hopy want help, they will call for
eart that will be your cut to call that will be your cut to call that

Don't forget the Christmas Get-together this year. It will be held at Anzac House on the second Saturday of December at 8 p.m. With the increased membership and attendance at general meetings, this should be well attended, so roll up, one and all, for a really first class evening. There will be no general meeting in

NEW BOOK!

"HIGH FIDELITY"

THE HOW AND WHY FOR AMATEURS

by G. A. BRIGGS, assisted by R. E. COOKE, B.Sc. (Eng.), as Technical Editor

As the title implies, this non-technical book is intended for amateurs, but it should also interest those who have not vet joined the ranks of amateurs and are merely contemplating a step in the direction of better sound reproduction in the home.

190 PAGES, 65 ILLUSTRATIONS BOUND FULL REXINE FINE ART PAPER

PRICE: 20/- Postage 1/-DE LUXE EDITION

BOUND IN RED LEATHER PRICE: 27/6 Postage 1/3

MAIL ORDERS BY RETURN

McGILL'S AUTHORISED NEWSAGENCY

Est. 1860 "The Post Office is opposite"

1775 ides 2.5 Volt Filament W.D.G.

183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA Phones: MY 1475-6-7

Top Quality A. & R. **Power Transforme**

The latest in its field. Built to a high amodest, yet reasonably priced, this NeW high quality of third A. B. Profession. But the profession of the professi



	1763 1764 1765 1766 1767 1768 1769	100 " 125 "	Ma.	D.C.	Sec. "	Volts:	300-C.T300 325-C.T325 385-C.T385 285-C.T285 300-C.T300 325-C.T325 350-C.T350	Typ	e 1776 1777 1778 1779 1780 1781 1782	175 " 200	Ma.	D.C.	Sec.	Volts	285-C.T285 325-C.T325 350-C.T350 385-C.T385 350-C.T350 400-C.T400 450-C.T450	
"	1770 1771 1772	150	"	"	"		385-C.T385 285-C.T285 325-C.T325	Typ	e 1400	250	Ma.	D.C.	Sec.	Volts:	565, 500, 425 each side C.T.	
	1773 1774* 1775	"	"	"	n n	"	350-C.T350 350-C.T350 385-C.T385	Тур	e 1371	(400	Ma.	D.C.			1000, 850, 750 600, 500 each	

Types 1763 to 1782 Vertical Mountings with Terminal Boards. Type 1400 Horizontal; Type 1371 Vertical with Top Term. Board. EOUIPMEN ELECTRONIC

378 ST. KILDA ROAD, MELBOURNE, VICTORIA Victoria: Homecrafts P/L., J. H. Magrath & Co. P/L., Radio Parts F Ltd. Sth. Aust.: Gerard & Goddman Ltd., 198 Rundle St., Adelaide. Brisbane; Messrs. Chandlers P/L., Cr. Albert & Charlotte Sts., Brisba Hay St., Perth. Tas.: Homecrafts P/L., 202 Elizabeth St., Hobart. N.S. 118 Phillip St., Sydney; Homecrafts P/L., 100 Clarence St., Sydney. omecrafts P/L., J. H. Magrath & Co. P/L., Radio Parts P/L.



side C.T.

mittent Rating)

December as the fourth Friday is right in the middle of the festive season so you can make the Get-logether do instead.

Well, all the very best wishes to you and yours for a Merry Christmas and a successful

TOWNSVILLE

JEFOT. TOWNSVILLE

Before going to the monthly meeting, went
to deposit years of the townsor to all this
townsor to the second of the second of the
townsor to the second of the second of the
townsor townsor townsor townsor townsor to
get amongst the DX during convolvemence,
get amongst the DX during convolvemence,
townsor townsor townsor townsor townsor town
at quorum pains two associates who are
town at quorum pains two associates who are
town and townsor townsor townsor town
townsor townsor townsor townsor
Townsor townsor townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor
Townsor

way.

Visitor to my sheek this month was Ed 4EW,

Visitor to my sheek this month was Ed 4EW,

or transfer to Darwin, and promised to

Darny's bek again in Port Moresby after los
man yacht "Yasme"—still undaunted and looking

for another boat to complete his journey.

MARYBOROUGH

First result MARTHOROGORI

First result of the 60 foot tower at 4 cm was
a minus of the 60 foot tower at 4 cm was
a minus of the 60 foot tower at 4 cm was
warvick. This is a new State record. Next on
the mast will be a 10 mx quad which is ready
the minus of the 60 foot of the 60 foot
the minus of the 60 foot
the minus of the 60 foot
the foot
t

SOUTH AUSTRALIA

SOUTH AUSTRALIA

Our T.v.i. Committee should be pleased with the execution to represent they obtained as the control of the please of the control of the con

inder construction, and the was assembled from the including the world, with particular reference to 2.5.4. where ARRL led the field, and a great number of manufacturers who had had access of experience in t.v. activities and t.v.i. problems assisted by supplying their angles of

to the VK2 boys who were reneiring co-opera-tion on their present activities and were keep-ing VK5 posted.

This was followed by Ian who had previously set up two t.v. rx's, a pattern generator and a

small tx learned by Les SAX, amongst other tieses of interest including a glob. But we sell the sell of the sell o

screen and a rew man, and there.

Many thanks go to Ray, Rob, and Ian for assembling such a wealth of information and delivering such interesting lectures, and to Ian and Les for the gear used in the demonstrations.

delivering such interesting behaves, and in fine of the control of

beign membership and promotes good public relations. See the bands goes to Chas Son, this month; very pleased to hear you on again and hose you find the new CRI to your likeling. Bert SKG is doing well with it mx DX these A.O.C.F. Classes have started with the mx DX these A.O.C.F. Classes have started with 25 members to try their luck, in fact the opening meeting excommodate them, all—so there is now more room for any extras. A YL is joining the ranks, all the best to start the started and the started and

NORTH WESTERN

NO MITH MESTERN

Not much heard from the gibber country this
with their verticus remainer. The Port Lincols
with their verticus remainer. The Port Lincols
so yet advised Pst 117. Is bedy from loopstall and
is abiliting his QTM and by the time these notes
is abiliting his QTM and by the time these notes
the property of the property of the property of the
well in his row place or shooter, don't forcet
here quite well. Willy SPP is still settle postplants for a re-build to get on to other hands,
the property of the property of the property of the
punch for you. George SGA still busy, but not
24 on to our heard property for the property of the prop

SOUTH PAST

Leo XZAG provided a lecture for last meeting based on carrier telephony 'I'.M.G. style', most thinsance at some future meeting. Claude Edit had a lot to say about this carevan trip to VKZ month. The control of the co

300 ft. mast at the b.c. station, preventing a Renmark hook-up-put it on top, Davel! Erg SKU manages a few DX on 20 c.w. to keep his hand in, but is spending most of his spare time making ribs for the saliplane—make a few spares, Erg, for they do crack you know.

WESTERN AUSTRALIA

WESTERN AUSTRALIA

At the october Principal mention for Archive Syrickand gave, a nost interesting lecture on Syrickand gave, a nost interesting lecture on the stars at the star at the stars at the star at t

TASMANIA

TASMANIA

At usual, 70 med on the way, so in deperation will have to fill and pad with control of the control o

NORTHERN ZONE

NORTHENN ZONE

A good thindence of members attended the
real good the continue of the continue of the
to bear a lecture and demonstration on "Supersonic Fault Detection," given by associate Good
of the new diesel electric lecomotive workshops,
of the continue of the continue terricological and the continue of th

Amateur Radio, December, 1956

The general activity is done to a low lovel, but may brighter up with the ammer menths about any brighter to with the ammer menths about a love the control of the control

NORTH WESTERN ZONE

NORTH WESTERN ZONE

To consider of the rose of the control of the

Denis TUR.

After this naticion was held, and it was After this naticion was held, and if was properly to the property of the

model; whit did that bring Teel?

Move that tr. coming along, Johnsy Leel
makes a good signal source. George IXL, and
he tops recorded, here not been faulted that
he percentage, here not been faulted that
Denis TDK has a fine ground plane seleming his
Denis TDK has a fine ground plane seleming his
Denis TDK has a fine ground plane seleming the
mention of the percentage of the percentage
Denis TDK has a fine ground plane seleming and
mention; appeared to the percentage of the percentage
assent signal, although he was present at the
seleming appeared to be regretored in current
experimenting. with the reception of t.v. at
mention; appeared to the percentage of the
mention; appeared to the percentage
to the percentage of the percentage
to the percentage of the percentage
to the hardy good EX hunting with the
wrap-up given to the Hinn on a Parliamentary
production experimentage to exchange of the terms of the
wrap-up given to the Hinn on a Parliamentary
production experiments.

HAMS

Fixed and Mobile. Your-CALL SIGN in mounted PLASTIC LETTERS. Ideal for shack or car. 5/6 posted. R. Roy, 23 Pine Ave., Elwood, Vic.

HAMADS

1/- per line, minimum 3/-. Advertisements under this heading will only be accepted from institute Members who desire to dispose of equipment which is their only be desired to the control of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisement not accepted in this column.

ALL OUT, Silly Prices. Radio, p.a. gear, components, offer and take away. 147 Patterson Road, Moorabbin, Vic. XU 4732.

SELL: Bendix TA12D Xmtr., 100w., bandswitched 4 bands, 80, 40, 20, 10 mx. Complete with tubes, circuits, manual notes, case. All reasonable offers considered. I. Jay, 80 Grandview Grove, Rosanna, Vic. JL 2295, MF 0331 (Bus.). SELL: Modulation Transformer, Ferguson 25w., as new, £3. M. Collins 18 Natimuk Road, Horsham, Vic.

AERIALS G4ZU Three-Band Minibeam, Mobile Transmitter and Antenna RP T/R Switching for 144 and 288 Mc. Antennae Mar.p.14 Mar.p.12 Rotary Beams for 20-15-10-5-2 Metres Aug. p.2
Slot Beam, The Jan. p.10

AUDIO FREQUENCY EQUIPMENT AND DESIGN

Clamp Tube Modulation Dec. p.7 Gated Screen Modulation . Jan. p.10 High Level Clipping and Filtering Wide-Range Tone Control in Jan. p.6 Amateur Phone Nov.p.12

BOOK REVIEWS "From the Electron to the Superhet."

"Germanium Diodes" ... Aug 15 The Argonaut A.M./F.M.
M.W./V.H.F. Tuner — Receiver" Nov.p.12

CONTEST RESULTS

National Field Day, 1956 National Field Day, 1956, May p.7 Amended Results Jul. p.14 Ross Hull Memorial V.h.f., May p.7 1954 World-Wide DX Contest VK Results 1955 "CQ" World-Wide DX Feb. p.10 Contest Jun. p.12 1955 VK-ZL DX Contest 1956 Remembrance Day Con-Aug. p.8

DISPOSALS EQUIPMENT Converting the SCR522 Gene-motor to 12 Volt Operation Jul. p.3

MISCELLANEOUS

Amateur's Present at Opening of John Flynn Memorial Church Jun. p.7 Church
Analysis of World-Wide Ionospheric Propagation to and
from Australia, 1953-54
Australia and the International Geophysical Year
Emergency! Amateurs in
Ocean Yacht Rescue Oct. p.2 Aug! p.5 Ocean Yacht Rescue
Experiments with 144 Mc.
Underground
Heinrich Rudolf Hertz Nov.p.10 Mar. p.2 Feb. p.2 Cable Sockets . Aug. p.7

Hints and Kinks:-Feb. p.5 Panels Fixing Beam Wire Elements Foot Switch Apr. p.9 Apr. p.9 Holder for Nails, Nuts, Bolts, Apr. p.9

Lightning Protection
Polythene Spreaders
Relay Rectifier
Shifting the Frequency of a Sep. p.11 Jun. p.7 Apr. p.9 Feb. p.12 Crystal Simple B.F.O. Feb. p.12 Simple Group Boards Aug. p.7 Feb. p.12

Taps on Tank Coils ... Feb. p.12 V.h.f. By-Pass Capacities .. Apr. p.9

New Bottles for Old Nullabor Plains Expedition, 1956-57 .. Sep. p.7 Dec. p.5 Phone and C.w. Monitor Aug. p.6
Pulse Theory:— Part One Part Two
Part Three
Regulations: Portable-Mobile Sep. p.5 Oct. p.6 Nov. p.5

INDEX TO VOLUME 24-1956

May p.3 Operation Relays May p.5 Report of the First T.v.i. Field Jul. p.2

Single Switch Control
The Answer is a Ham
Transformer Theory and Prac-Jan. p.10 Oct. p.12 Part One Feb. p.7 Mar. p.5 Jun. p.9 Two Metres, But How! Understanding Television In-

Oct. p.9 terference Valve Data:—
EL34 Output Pentode
QE04/10 Power Tetrode
QQE03/12 Double Tetrode
5894 (QQE06/40) Double Nov.p.14 Aug. p.9 Tetrode Apr. p.15

6252 (QQE03/20) Double Tetrode Apr. p.15 VK5WC-The Woomera Amateur Radio Club Sep. p.12 Volts, Amps. and Man:-

Part One Apr. p.11 May p.11 What About an Index? Aug. p.7 W.I.A. Countries List Jan. p.12

RECEIVING Another Two-Metre Converter Dec. p.2

Bandspreading the Super-Pro on all Bands Mar. p.9 Building a Panoramic Adaptor Jun. p.2 Cheap and Effective "S" Meter Mayp.12 Home-Built DX Receiver, A .. Apr. p.6 Integral Crystal Calibrator for Superhet. Receivers Jan. p.9 V.h.f. Field Strength Indicator

TELEVISION

.... Sep. p.11

Apr. p.2 May p.2

Television Receivers - Inter-mediate Frequency Recom-mendations by the Australian Broadcasting Control Board Aug.p.12 W.I.A. Federal Executive's Action on Television Re-

ceivers TRADE REVIEWS

Electric Deposited Copper Foil Nov.p.14 Power Transformers by A & R Aug.p.14

TRANSMITTING

Clamp Tube Modulation Dec. p.7 Low-Pass Filter Home-Build-Oct. p.11 ing Simplified Phone and C.w. Monitor Pi Network Tank Circuit Aug. p.6 Jan. p.2 Mobile Transmitter and An-Mar.p.14 Tesla Oscillator, The Nov. p.8 Transmitter with Low Harmonic Output:-Jan. p.5 Mar.p.11 Further Notes

" Transmitter, The



AMATEURS' BARGAIN CENTRE *

Buy Your Test Equipment on Homecrafts' Easy Terms

RESISTOR SUBSTITUTION BOXES

Range: 25 ohms to 10 megohms each Box contains:

- 3—2 x 12 way Res. Strips 3—1 x 11 Wafer Switches
- 1—1 x 3 Wafer Switches 22—1 watt Resistors
- 11—3 watt Resistors 4—Pointer Knobs
- 2—Banana Sockets To clear: 75/-
- These Boxes are ready to use and are a great aid to the Serviceman or Experimenter.

SURPLUS METER STOCK

To be Cleared.

Some of the many types available are-

0—50 Milliamps 0—100 " 0—250 " 0—500 " 0—100 Volts D.C. 0—10 " A.C.

0-100

59/6 each
All above types are 4 inch Round.
Other types available in 4 inch Round
or Square Cases.

MINIATURE RELAYS 9-12 Volt—4/6 each

HOMECRAFTS FOR EVERYTHING IN TELEVISION

Aerials--

Antiference Belling-Lee Astor

Mountings — Masts — Feeder Cable — Stand-off Insulators — Outlet Plugs and Sockets.

Outlet Plugs and Sockets. See us for TV Spares, such as:

E.H.T. Supplies
Power Transformers
Chokes
I.F. Strips
Turret Tuners
Frame Transformers

Frame Transformers
Deflection and Focus Assemblies
Picture Tubes
Video Chokes, etc., etc.

SPEAKER TRANSFORMERS 10,000—3.7 and 8,000—3.7 3/11 each

CHASSIS

Black Crackle Steel
5, 6 or 7 Valve
8/11 each

RECTIFIERS
English Selenium
Either 6v. 4a. or 12v. 2a.
44/8 plus tax

HARD-TO-GET VALVES IN STOCK

OC3/VR105 12AV6 AK2 OD3/VR150 12BA6 AL4 OA3/VR75 12BE6 6146 184 12SA7 UCH4 3Q5 12SQ7 UCH42 6A3 25L6GT UCH41 12AH8 321.7GT HF9 12AT6 884 UBL21

In addition to full stocks of all wanted types.

100 Ma. 30 H. CHOKES 18/9 each

C.R.O. SOCKETS Suit 5BP1-2/6 each

15-CORE CABLE
Talk Back Systems, etc.—3/6 vd.

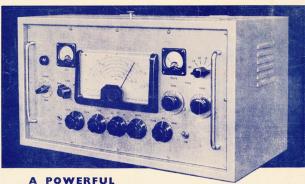
ROUND BAKELITE BOXES
Suit 6 inch Speaker

2/11 each
Half Meg. SWITCHPOTS
4/11 each

SYNCHRONOUS VIBRATORS 6 Volt—12/11 each

FB 3711

290 LONSDALE STREET, MELBOURNE



POWERFUL

AMATEUR BAND TRANSMITTER...

This custom-built amateur band transmitter is built with the finest components available. A transmitter that packs plenty of power for DX operation.

"M.L.IOO"

- POWER RATING: 100 watts phone or C.W.
- FREQUENCY RANGE: 3.5 to 29.8 Mc/S in 5 bands
- FREQUENCY CONTROL : GELOSO Y.F.O. or CRYSTAL CONTROL
- POWER SUPPLY: 200-240 V. A.C. power pack incorporated
- FMISSION: C.W or A.M phone (separate modulator available)
- R.F. TUBE LINE UP : V.F.O. 6J5, 6AU6, 6L6, P.A. 2 x 6146
 - R.F. OUTPUT : Pi-coupled to low impedance line

Further details of the M.L.100

Transmitter are available

from the

Australian

Representatives.



R. H. CUNNINGHAM PT

and 184 VICTORIA ROAD, DRUMMOYNE, N.S.W.

Amateur Radio, December, 1956